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SPECIAL V.H.F. ISSUE

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## WI BROADCASTS

All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official Broadcasts.

**VK1WI:** Sundays, 1100 hours EST, 7146 Mc. and 2005 hours EST 59 and 144 Mc. No frequency checks available from VK3WLF. Intrastate working frequency, 7125 Mc.

**VK4WI:** Sundays, 1120 hours EST, simultaneously on 3872 and 7146 Mc., 51.015 and 146.35 Mc. Intrastate working frequency 7135 Mc. Individual frequency checks of Amateur Stations given when VK3WLF is on the air.

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**VK5WI:** Sundays, 0930 hours WEST, on 7146 Mc. No frequency checks available.

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# AMATEUR RADIO

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## EDITORIAL

★

### THE VINDICATION OF "JOHN GILPIN"

"John Gilpin was a citizen  
Of credit and renown,  
A well known, radio "Ham" was he  
Of many a flood bound town."

(With apologies to Cowper.)

When Nature in her anger gathers the elements in her hands and hurlis them at some unsuspecting locality, the unfortunate victims quickly find that normal and regular routine is suddenly swept away. The superficial conditions of men are reduced to a Common Denominator. The inhabitants of a disaster area learn that they now have to depend on the fellowship, the understanding, and intelligence of their immediate companions; the people who live round the corner or across the paddock. No longer do politics, personalities, and outlooks become important. No longer do files of paper, licences, permits, and controls add up to anything meaningful. All that is important is fellow man and his ability to play his part.

Some few weeks ago, when the flood menace struck at Northern New South Wales, the citizens found that they were in the midst of just such an experience. Where once, by lifting a telephone or pressing a switch, they could demand service, they found none, and authority was powerless to supply any. They were forced to consider the situation; to find among themselves, someone who had the ability and the initiative to supply their wants, to relieve them of their distress. That person was not hard to find.

In his humble shack, surmounted by towering poles, "John Gilpin" (previously rather suspect because of his "queer" habits of talking to others of his kind over the air) had

notified the relief co-ordinator and was hard at work providing just that service the people lacked. Communications with the outside world were again established, the momentary needs were stated and help was assured.

Quickly the dejected realised that here indeed was one, who, in his own modest way, had trained himself to be of service to the community when the need arose. He hadn't announced his plans with high-pressure news releases, or long lists of detailed estimates. He hadn't declared this policy with acclamation, or derided that with contempt. He had quietly prepared knowing that, when the day of his testing arrived, he would not be found wanting. Those to whom he gave assistance will vouch for this and for his devotion to the cause of humanity.

Radio Amateurs throughout Australia, nay throughout the world, can be justly proud of the feats of that gallant band of enthusiasts who, using their own call signs, made their voices heard when all else was silent. "John Gilpin," the individual, had triumphed when all else had failed. He had proved that he could surmount all difficulties—that man was greater than the machine.

GENTLEMEN, you who did so much to raise the name of "Radio Amateur" to a zenith previously unattained, we salute you. May your sterling efforts be rewarded in a manner befitting your endeavour.

FEDERAL EXECUTIVE

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# THE "SKELETON SLOT" ANTENNA

BY G. M. BOWEN,\* VK5XU

There has been quite a deal of interest in the slot as an antenna since the technical details of the Sutton-Coldfield t.v. station were released in "Wireless World." As the original slot antenna had a very high wind resistance with its solid surround, it was only natural that the Amateurs who could see the makings of a good v.h.f. radiator in it, would set to work to see how much of the surrounding metal could be cut away without seriously affecting its performance.

G2MC, in the August issue of "W.W." gave the details of a "skeleton" for the 144 Mc. band and in order to have something different to talk about at a lecture, I made up a model in about half-an-hour which provided us all with a night's entertainment. The construction is very simple and the accompanying diagrams should be sufficient guide; the diameters are not critical.

The antenna radiates as a broadside array with a polar diagram like two half wave dipoles spaced half wave apart and fed in phase. The resultant figure of eight pattern is elongated and results in an approximate gain of 4 db over a single dipole.

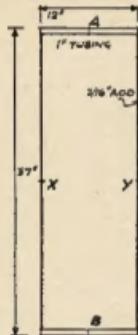


Fig. 1.

Maximum radiation takes place from the two short ends made from large diameter tubing as it is here that maximum current appears and that it does, can be proved by testing for horizontal or vertical polarisation with a simple dipole field strength meter. The dipole gives maximum reading when it is parallel to the two pieces of tubing, so that when they are horizontal the radiated wave is horizontally polarised.

Referring to Fig. 1, X and Y are high voltage, high impedance points, but as yet there is no data as to the exact value for the "skeleton." A and B are points of maximum current and therefore low impedance points which can be earthed if so required.

Since our article on "Skeleton Slots" in February, 1954, issue of "Amateur Radio," we have received further articles by VK5XU and VK5NO describing further experiments and results obtained with them.

To complete the picture we are publishing both articles to give readers additional food for thought and to satisfy the urge to try something new.

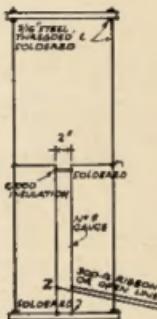


Fig. 2.

A quarter wave open line shown in Fig. 2 can be used as an impedance transformer and any line can be matched into the antenna. I found that 300 ohm ribbon matched in about one-third of the way up from B.

Fig. 3 shows an arrangement of feeding an unbalanced co-axial line into the two high impedance points X and Y. Some fanning out of the open line connections to the co-axial quarter wave

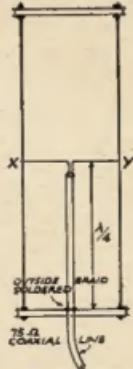


Fig. 3.

may be found necessary as the quarter wavelength of co-axial matching section will only need to be about 60% of 19" according to the velocity factor of the co-axial cable chosen.

Fig. 4 shows the quarter wave open wire stub affixed at right angles to the plane of the antenna. With this construction it is possible to add a reflector at the point where the stub is shortened. Its length will be an electrical half wave which will be approximately 38 inches.

When experimenting with reflectors and directors, I found that the use of reflectors gave the better results; better still, a reflector spaced 0.15 wavelength behind each 12 inch section of the antenna. In this case the reflectors were 5% longer than the length of an ordinary dipole (i.e. about 39 to 40 inches). The closer spacing reduced the radiation resistance and a re-adjustment of the feeder input was necessary to obtain correct matching.

By adjusting the distance between the two reflectors, the depth of the radiated beam can be altered, but as yet I have not made any quantitative tests to ascertain what gain could be expected. This particular aspect should be worth experimenting with, especially if readings can be obtained over some considerable distance.

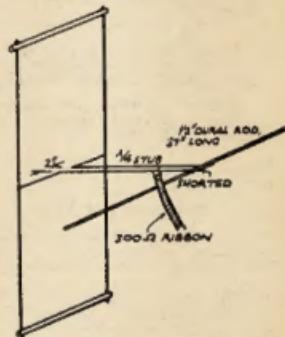


Fig. 4.

The single reflector raises the forward gain another 3 db and increases the front-to-back ratio as is usual; while there is quite a considerable improvement with the two, but how much I cannot yet say.

Fig. 5 should be self explanatory. Points A, B, C and D are at earth potential and therefore can be bonded together with the supporting mast passing through B and D, thus enabling the constructor to make a thoroughly rigid job which can be easily rotated. A third reflector could then be mounted a quarter wave length behind the feed points X and Y. The method for feeding the array, then, would be preferably as in Fig. 4.

\* 73 Portrush Road, Toorak Gardens, S.A.

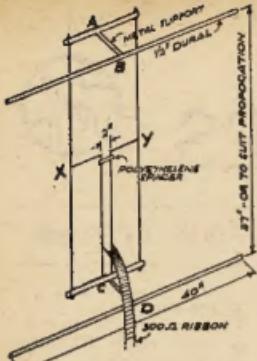


Fig. 5.  
Spacing of Reflectors approx. 18 inches.

If a combination of any unlike metals is used in constructing the array, it is wise to give the finished array a fairly heavy coating of aluminium based enamel to stop corrosion of the joints in the damp weather. Make sure, too, that all joints are soldered if steel and brass are used, particularly where the long side pieces enter the larger diameter tubing. This will keep the ohmic losses down.

## Having Fun With "Skeleton Slots"

BY DON B. KNOCK,† VK2NO

Although until now practically unheeded by VKs, something new and intriguing has hit the headlines (overseas) in the way of antennae. The "skeltonised" version of the aircraft type "slot" antenna, first appears to have originated in U.K., although passing reference has been made to it in "QST" (U.S.A.).

It remained for G2MC to evolve a practical version for 2 metres, with a full description in August, 1954, "Wireless World." I wish to draw attention also to a very informative article on the subject in "R.S.G. Bulletin" for January, 1953, dealing with the stacking, for v.h.f. work, of "Skeleton Slots." (An article on this subject was published in "A.R." of February, 1954, p.2—Ed.)

Co-incident with a return to Amatuer v.h.f. activity after an enforced absence of six years at VK2NO, some QRP 144 Mc. gear was put together, and a start made with a plain dipole. With a transmitter boasting all of 2 watts on the 6J6 p.p. triode p.a., excellent contact was established with most Sydney stations. One or two, however, remained "hard to get" from my coastwise "edge of beyond" location.

In the search for better signal strength, the dipole grew a reflector,

† 43 Yanko Avenue, Waverley, N.S.W.

became rotatable, and things began to look up. Then I thought of the skeleton slot and got busy.

Two such slots for 144 Mc. were made up, fed in phase, with one above the other, and backed by reflectors. The immediate results border on the fantastic, most of the v.h.f. gang around Sydney being sceptical about the 2 watts producing such a "mighty" signal.

There is no fuss about tuning up this array—for it is broadly resonant. The field strength indicator, a 0-1 Ma. meter with a 1N34 diode and small dipole, shows a high degree of forward gain, several feet in front of the array. Tests made with reliable observers up to 60 miles distant indicate a back-to-front ratio of 7 S points, which is around 30 db, and a very good discrimination off the ends of the array.

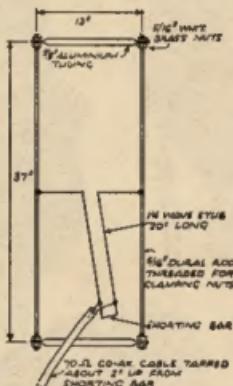


Fig. 6.—Skeleton Slot for 144 Mc.

The sketch (Fig. 6) shows the structure of the skeleton slot for 144 Mc., cut to hit around 144.6 Mc. Two 37 inch lengths of 5/16 inch rod, dural in my case, are threaded at the ends for hex. nuts. Two 14 inch lengths of tubing are flattened at the ends and drilled for 5/16 inch clearance at 13 inch centres. Clamped in position by the nuts, the assembly becomes rigid and virtually self-supporting. The centres of the 14 inch tubes at top and bottom are "cold" for r.f. and therefore no insulation is necessary for mounting on a pole or any structure.

Now comes the really important point about the skeleton as distinct from the metal surround slot—although a physically vertical arrangement, it radiates horizontally polarised waves, a decided advantage with interesting possibilities for lower frequencies. The feed points at the centres of the 37 inch upright rods approximate 600 ohms, so that if desired an open line may be applied, or a quarter wave stub with shorting bar for 70 or 300 ohm line. G2MC found that the stub can be brought down vertically and terminated on the bottom cross tube member. Alternatively, the stub can be arranged hori-

zontally on a strut from the supporting pole, and a 40 inch reflector placed as combined shorting bar and reflector.

Fig. 7 shows how the two skeleton slots are arranged at VK2NO. A length of 14 x 1 inch timber 10 feet long is used as the foundation, with three struts 20 inches long. Two of the struts are at positions from the centres of the slots, to hold the respective reflectors, and the centre one is for the junction of the feedlines.

From the centres of the 37 inch rods, 34 inch lengths of 16 gauge wire are arranged, being brought together on 2 inch polystyrene spacers to form a uniform feedline. These lines, from each slot, are paralleled and thus the effective impedance is 300 ohms, the feedline from the array being Telcon 300 ohm ribbon.

It will be appreciated that with these two slots phased and paralleled (make sure you don't transpose the lines), no matching stub is necessary. If you wish to use low impedance line, that is simple too. Just make the paralleled lines from the slots 30 inches long each, instead of 34 inches (as for 300 ohms), join on the 70 ohm co-ax or ribbon, and away you go.

The results obtained with this little array are so promising that the writer is harbouring slot ideas for other bands. For instance, a skeleton slot 9 ft. 6 in. by 3 ft. 3 in. should be interesting on 6 metres; remember—horizontal radiation with a vertical array! What about one 22 ft. by 7 ft. for 21 Mc., hanging vertically from that unused pole? You can pull it around with two ropes for directivity!

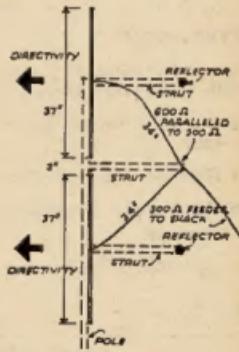


Fig. 7.—Side View.

There are other considerations, too, subject also to trial and result. It may be possible to use a 6 metre skeleton slot inside a 15 metre one, and rotate the two together! When on 6 metres the larger metal rectangle might contribute somewhat to the normal slot "surround." My reason for telling this yarn about the skeleton slot is mainly because of its convenience in erection. It is not claimed that there are any magical qualities, but it most certainly is a fine performer on 2 metres.

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# LOW NOISE R.F. STAGE FOR 144 Mc.

BY F. G. BAIL,\* VK3YS

**T**HE tube used for the r.f. amplifier connected, this circuit (Fig. 1a) providing about the highest gain, commensurate with a good signal to noise ratio, that is attainable in one r.f. stage. Noise due to random electron flow within a tube is at a minimum with triodes, a factor which is of practical use in receivers on v.h.f.s. The p.p. arrangement reduces the loading on the input circuit, enabling a relatively large grid inductance to be used, so that a good step-up ratio from antenna coil to grid coil is obtained. This, of course, gives a substantial voltage gain ahead of the grids.

The 6J6, with its common cathode, is particularly suited to this application; there being no flow of r.f. current to earth at this point in a p.p. Class A circuit, the effects of cathode lead inductance are eliminated. There are no difficulties, of course, in obtaining 6J6s or their English equivalent, the ECC91.

The tube requires neutralisation, and this is achieved with small disc condensers made as described later.

## CONSTRUCTIONAL DETAILS

An earthed plate (Fig. 2) across the tube socket provides shielding between the grid and plate circuits. Brass shim 0.004" thick was used, although clean tinplate should suit the purpose equally well. The holes H.H. serve to bring through the insulated plate leads to the neutralising condensers. It fits snugly across the tube socket between pins 3 and 4 and pins 7 and 1. Pin 3 (the earthed heater pin) is soldered onto the shield, as is also the centre screening pin of the socket.

A solder lug, pointing away from the socket, on each of the bolts fastening the socket to the chassis, provides further support when bent up parallel with and soldered to the shield. If the ends of this shield are turned back at right angles, for say  $\frac{1}{4}$ " to form flanges, rigidity is assured.

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Here is a description of a high gain low noise r.f. amplifier stage for the 144-148 Mc. band. It can be added to an existing receiver or fed straight into a mixer-oscillator circuit to make up a two tube, high performance converter, along the lines of a the suggested arrangement shown.

A Teletron ST57L/2 (shielded) socket was used, and the mounting saddle in this series is so orientated with respect to the pin connections as to suit the above arrangement.

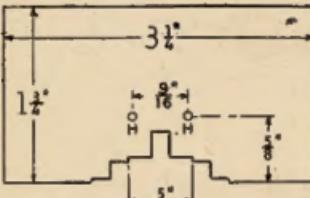


Fig. 2.—Shield for p.p. 6J6 stage, showing cutout to allow fitting over the socket and its associated fixing bolts.

## NEUTRALISING CONDENSERS

A single way resistor strip (Fig. 3), having four free lugs between the mounting lugs, was used as a support for the screw adjustment of the neutralising condensers (as well as for the grid coil). It will be seen that lugs 1 and 4, which should be tapped with a  $\frac{1}{4}$ " screw thread through their rivet holes, each have a brass nut soldered onto them at this position to carry the neutralising condenser screws. The tapping of the rivet holes alone did not give sufficient rigidity to these adjusting screws, but with the addition of the nuts this problem was overcome.

After the tapping has been done, insert the adjusting screws ( $\frac{3}{16}$ " x  $\frac{1}{4}$ " brass machine screws) with the nuts run on about half way, then slightly tighten the nuts—lock nut fashion—onto the lugs. Check to see that the screws turn easily but without wobble, holding the nut against turning with fingers or pliers, and then solder the nuts to the lugs.

To the tail end of each screw solder a disc,  $\frac{1}{8}$ " diameter, of thin brass or copper. Similar discs are soldered to the ends of the plate wires which are brought through the shield for this purpose. For maximum rigidity these wires can be supported by tiny standoffs, or a resistor strip, located between the tube socket and the grid coil mounting strip. Two  $\frac{1}{8}$ " holes were drilled through the end of the chassis to permit adjustment of the neutralising condensers.

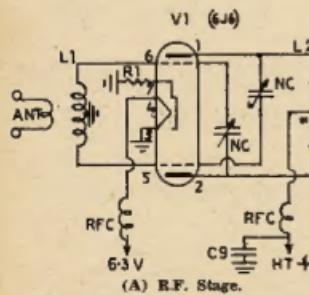
## COILS

Wire size number 20 s.w.g. enamelled. The grid coil (L1) consists of eight turns, centre tapped,  $\frac{1}{8}$ " inside diameter and spaced to occupy a length of  $\frac{1}{2}$ ". The centre tap is earthed via a short direct lead.

Antenna coupling coil four turns, wound over centre of grid coil and connected to a two-pin socket fixed behind it.

The plate coil (L2) is soldered directly to pins 1 and 2 of the tube socket, and is so wound as to provide a  $\frac{1}{2}$ " space in the centre for an output link on the grid coil of the following stage. It has six turns  $\frac{1}{8}$ " diameter, and the overall length is approximately  $\frac{1}{2}$ ". If this coil is arranged so that the centre tap is on the side nearest the chassis, adjustment of the output coil is facilitated and the plate feed r.f.c. is kept out of the way. Half an inch of lead on this choke is sufficient to enable it to clear the coil and be led away to one side.

The r.f.c. used came from the American I.F.F. set. These chokes consist of



(A) R.F. Stage.

C1—Oscillator tuning (see text).

C2—3-12 pF. trimmer.

C3—20 pF. N.P.C. (zero drift) ceramic or silver mica.

C4—220 pF. HI-K ceramic or midget mica.

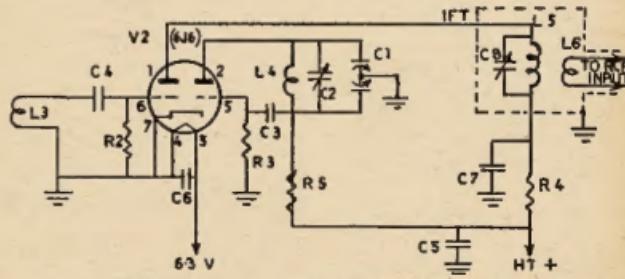


Fig. 1.

C5, C7, C9—500 pF. HI-K ceramic or midget mica.

C6—330 pF. HI-K ceramic or midget mica.

C8—50 pF. trimmer.

N.C.—Neutralising condensers (see text).

R1—60 ohms,  $\frac{1}{2}$  watt carbon.

R2—1 megohm,  $\frac{1}{2}$  watt carbon.

R3—15 megohms,  $\frac{1}{2}$  watt carbon.

R4—1,000 ohms,  $\frac{1}{2}$  watt carbon.

R5—10,000 ohms, 1 watt carbon.

22 turns of number 28 or 30 enamelled wire, the diameter being  $\frac{1}{4}$ " with a winding length of approximately 7/16".

#### NEUTRALISING PROCEDURE

Set the neutralising condensers to about  $\frac{1}{2}$ " spacing as a convenient starting point. With the antenna connected and the r.f. amplifier in operation, feeding into a mixer or existing 144 Mc. receiver, sundry "joeys" and a high bias level will probably be heard due to regeneration in the amplifier. Tune in to a relatively strong signal, then disconnect the h.t. supply to the r.f. amplifier (leaving the heater on). The signal will still "ride through" due to tube capacities, etc.

With an insulated screwdriver, e.g. a length of  $\frac{1}{2}$ " polystyrene filed at the end to form a screwdriver point, adjust the neutralising condensers for minimum signal. Reconnection of the h.t. supply should now bring the amplifier into normal operation with freedom from oscillations.

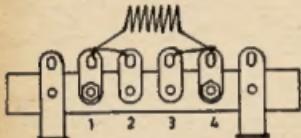


Fig. 3.—Resistor strip mount for r.f. stage grid coil and neutralising condensers.

The main receiver tuning control, particularly if it is one with a reasonable reduction ratio, often provides a convenient means of keeping the signal "in tune" for such tests, being in effect an additional vernier control.

If a signal generator, etc., is used to supply a signal for v.h.f. receiver alignment and adjustment, it should be so placed that the signal is picked up via the antenna to preclude the possibility of direct radiation getting into the receiver. Small temporary antennae may help in this regard.

A h.t. supply of 160 volts is sufficient for the amplifier, the current drain being in the region of 20 Ma.

Inasmuch as it is a broad-band circuit, no difficulty was experienced in obtaining a sufficiently even response over the whole of the two metre band.

The balanced input is particularly suited for use with balanced feed lines, in this case 300 ohm ribbon feeder. Some modification to the antenna coil may be required for other types of line. In so far as co-axial feed line is concerned, probably the best method, in order to preserve the balanced input feature, is to use a "balun" (balance to unbalance, impedance transformer) between the line and the amplifier input. Such a device, made from a piece of 75 ohm co-ax, will transform a 75 ohm unbalanced line to 300 ohm balanced output.

#### TWO TUBE CONVERTER

In the writer's case the r.f. amplifier was combined with the 2 metre 636 converter described in "Amateur Radio," January, 1954.

The complete circuit of the arrangement finally used is shown in Fig. 1a and Fig. 1b, whilst the chassis diagram (Fig. 4) shows the layout of the major parts, and essential dimensions. The

condenser across the mixer grid coil was dispensed with as optimum results were obtained with a three turn coil (L3)  $\frac{1}{2}$ " diameter fairly close wound, and coupled about half way into L2. Too much coupling here can result in pulling of the oscillator, and also tends to make neutralisation ticklish.

The oscillator coil (L4) consists of four turns  $\frac{1}{2}$ " long, with an inside diameter of  $5/16$ ". This gave more bandwidth than the coil originally used.

The oscillator tuning condenser C1 is an Eddystone 15 x 15 pF. split-stator (180 degree rotation) cut down, with the aid of a jeweller's saw, to one stator and one rotor plate per section. C2, a Ducon type TS2A 3-12 pF. N.P.O. ceramic trimmer, mounts directly onto the stator supports of C1. When adjusted to about half capacity, it sets the oscillator to the low frequency side of the band. The i.f.t. which should be enclosed in a shielding can, tunes to the converter output frequency of 7.4 Mc. Keep the plate lead from the mixer to the i.f.t. as short as possible, to reduce any tendency towards oscillation in this stage. The i.f.t. coil details are:

L5—28 turns close wound on  $\frac{1}{2}$ " former, wound with No. 26 s.w.g. d.c.c.  
L6—8 turns wound over bottom of L5, No. 26 s.w.g. d.c.c.

The tuning dial is a National "Velvet Vernier" control ex the "TU" series of disposals tuning units.

Current drain of this converter is about 27 Ma. with 100 volts h.t. If the converter is to be enclosed in a cabinet, then it is as well to select one which provides for a reasonable amount of ventilation rather than an "air-tight" type.

The tubes and the i.f. mount above the chassis, other components below. In this way, the possibility of oscillator drift, due to heat radiation from the tubes, is reduced.

When feeding into a receiver using a standard 455 Kc. i.f. channel, the frequency drift of the converter, after a few minutes warm-up, is negligible. A T9 note is obtainable when receiving c.w. provided a properly filtered power supply is used. "Stand-by drift" is eliminated by leaving the converter on during transmission periods.

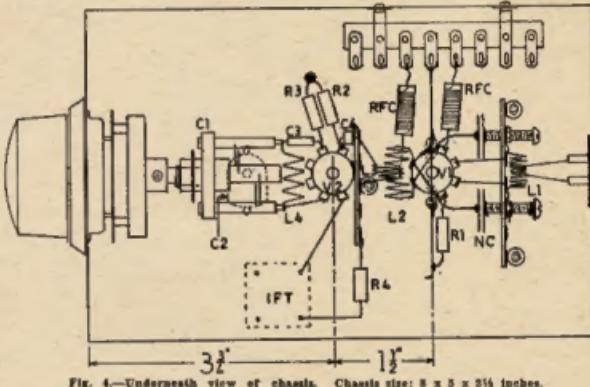


Fig. 4.—Underneath view of chassis. Chassis size: 8 x 5 x 2 1/4 inches.

#### HINTS AND KINKS TUNING SCR522 RECEIVER WITH- OUT A CRYSTAL

This is an idea for the 144 Mc. enthusiast for tuning the SCR522 receiver without the need of a crystal.

Remove one of the oscillator coils marked A, B, C, or D, whichever you like. Mount in a small can, preferably aluminium. Procure one defunct crystal holder and mount the can on the base of the holder, connecting the coil to the pins. Plug into the crystal socket of the band which still has a plate coil.

Turn the controls to the 144 Mc. band. Tune the slug on the plate coil and the slug on the coil in the new can for oscillations, re-adjust the condenser tuning controls for maximum gain, and we have a nice receiver, the stability of which is as good as with the crystal.

To the fastidious, the screws on both slugs could be extended to take knobs, and once the band is found, you could tune across the band with ease. The oscillator becomes the old t.p.t.g. That's all there is to it—VK4XL.

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# THE SILICON CRYSTAL NOISE GENERATOR\*

BY WILLIAM L. ORR, W6SAI

On the DX bands and on the very high frequencies the amount of noise generated by the receiver becomes a limiting factor in weak signal reception. The problem, therefore, is to design a suitable front-end for the receiver that contributes the least amount of noise and the maximum amount of signal amplification. A great many hours of time have been spent putting cascade r.f. stages in receivers, pulling out 6SK7's and putting in 6AK5s, and building grounded-grid pre-selectors.

The baffling enigma in such undertakings is that it is very hard to determine whether such improvements merely boost the gain (and noise) of the receiver or actually hold the set noise down while giving a lift to the signal. Many fellows have become extremely unhappy when they have found out that their new pre-selector-creation will not allow them to read a signal that is pushing S6 on the receiver meter.

## NOISE GENERATORS

Some time ago a simple thermionic diode noise generator was described for Amateur use in determining the efficiency of the input circuit of the receiver.<sup>†</sup> This noise generator consisted of a vacuum tube diode operating in a temperature limited condition. This means that there is sufficient plate voltage to saturate the available filament emission, and that if the plate voltage is increased the plate current will remain constant. Control of the plate current can therefore be regulated by varying the filament voltage.

Certain diodes, when operating in this condition, will generate a substantial amount of "hiss" or random r.f. noise. This hiss is of a very steady amplitude and may be used for measuring the sensitivity of the receiver.

The easier it is to hear a given amount of diode hiss over the inherent receiver noise, the more sensitive is the receiver. The diode hiss is proportional to the diode plate current, so a measurement of the excellence (or lack of same) of the receiver may be found by comparing the diode current to the amount of hiss heard in the receiver output.

A very well shielded signal generator could be used instead of the diode tube, but signal generators emit a signal on the order of milliwatts, and it requires expensive shielding and attenuation circuits to get down to the microwatt level that is needed for a signal-to-noise check. Some form of generator that starts from zero signal and works up is much better than one that starts with too much signal and works down!

The diode tube noise generator has never quite "caught on," since it has three basic faults:

1. The choice of the diode tube is critical. Only a few of them (the most expensive ones naturally) will work above about 50 Mc. This washes out the two metre band where a noise generator is sorely needed.

\* Reprinted from "CQ," June, 1952.

† B. Goodman, "How Sensitive Is Your Receiver?" *QST*, Sept. 1947, p. 13.

Many years ago a "noise generator" article would have made the author a likely candidate for the straight jacket. Today there is a big field of application for just such a device. So big, that we have reprinted from "CQ" this greatly improved version of the silicon crystal noise generator. It is so simple that it could be "thrown together" in a half-hour.

2. The diode generator needs both a filament and plate supply. It also needs some means of controlling the filament supply over quite a large range. This calls for a variable voltage transformer or a high wattage rheostat.

3. If the supply is a.c. operated, trouble will be encountered with line pick-up of stray radio signals that will introduce an error into noise measurements. Batteries will add weight and cost to the unit.

## THE SILICON CRYSTAL

An excellent substitute for the saturated diode tube is a silicon crystal. When a small current is passed through a silicon crystal in the direction of high-resistance, a constant r.f. noise of small amplitude is generated.<sup>‡</sup> No filament supply is needed, and the exciting voltage for the crystal may be obtained from a few flashlight cells. The silicon crystal is the only type that will perform this feat. Geranium crystals will not work. This washes out the IN34 type crystal. The war surplus IN21 and IN23 silicon crystals are excellent performers, and are still available on the surplus market at low cost. They have been used for noise generators up to 3,000 Mc.

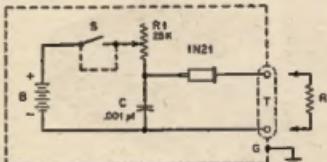


Fig. 1.—Wiring Schematic.

The crystal diode noise generator is a relatively high impedance source of noise, while the diode tube can be considered as a low impedance constant current generator. This fact must be taken into account when one uses the crystal type generator. All comparative signal-to-noise measurements must be made at the same impedance value. A comparison cannot be made if different impedance loads are used. Since most Amateurs have one standard feed line

value, the generator can be set for this value and no trouble will be encountered. This is a fairly small price to pay for such a handy device!

## CONSTRUCTION OF A CRYSTAL GENERATOR

Where else can you get so much for so few parts? Look at Fig. 1! The noisy crystal and C form a closed circuit at radio frequencies, placing the generated noise directly across the antenna terminals of the receiver, which are connected to the terminal strip T. Across C is placed the d.c. current supply. A maximum current of six milliamperes is needed, so four small "pen like" cells will last for over a year. The current is controlled by R, the calibrated potentiometer, and the switch S (mounted on the back of R) is used to turn the unit off when it is not in use. The whole generator is built into a small metal box that acts as a shield for the unit. A ground terminal lug is bolted to one top corner of the box to connect the box to the receiver ground terminal so that no r.f. potential will exist between the generator box and the receiver.

The silicon crystal and the condenser C must be mounted to the terminal strip T by very short leads. Extreme care must be taken when the wire leads are soldered to the crystal. The crystal should be held with a damp rag and the connections made very quickly with a hot iron. If you hold the crystal tightly in one hand, I assure you that you will not let it get too hot! If you are foxier than I was, you might take a Littlefuse holder and convert that into a crystal holder. I was too lazy to do this, and took the easy way out.

Since the flashlight batteries will last their shelf-life in this unit, it is permissible to wire them right into the circuit. Be sure to tape the exposed ends of the battery so they will not short out to the case. A small metal clamp can be used to hold the batteries in place.

If the receiver has a co-axial receptacle input, a matching plug may be put on the noise generator and connection made between the two with a short piece of co-axial line.

Only one thing is missing now. A composition resistor equal in value to the desired line impedance at which the measurements are to be taken is placed across the output terminals of the noise generator. A small one-half watt resistor will be satisfactory. If the co-axial plug and line are used, this resistor should be mounted inside the generator. The unit is now complete and ready for operation.

## OPERATION OF A GENERATOR

A typical test set-up for the checking of signal-to-noise ratio of a receiver is shown in Fig. 2. As mentioned before, the resistor R2 is a non-inductive composition resistor having a value equal to the input impedance of the receiver, or to the chosen impedance at which the checks are to be made. The noise generator is connected to the receiver

and the case of the generator is grounded to the chassis of the receiver. An output meter is connected to the audio circuit of the receiver and the receiver is adjusted as follows:

The a.v.e. and b.f.o. are both turned off. The r.f. gain control is placed full on, and the audio control is advanced until a reading is obtained on the output meter. This arbitrary reading is taken as the zero reading, or reading of natural receiver noise. There should be no pick-up of random signals in this noise, or readings will be in error. (If you don't get any noise from the receiver under these conditions, the overall gain is too low; you don't need a noise meter, you need a new receiver!)

The noise generator should now be turned on, and the knob turned until the receiver output meter registers a 3 db increase. (This corresponds to a voltage increase of 1.41 times the "zero" or original value.) The potentiometer reading on the dial scale now becomes the criterion of signal-to-noise ratio for that particular receiver. The less the reading (more resistance in the diode circuit), the better the signal-to-noise ratio of the receiver being tested.

The readings taken with this unit are arbitrary and cannot be referred to as "so many db above thermal noise." But they do give a ready means of comparing various changes that are made in the receiver. Different receivers may be compared under the same conditions, using the same load resistor.

You will find some startling things that may turn up during receiver checks. Some receivers simply refuse to "put

\* Any meter capable of reading a.f. output signal of the receiver; usually the "output" range of a multimeter across the speaker output terminals will give sufficient reading.

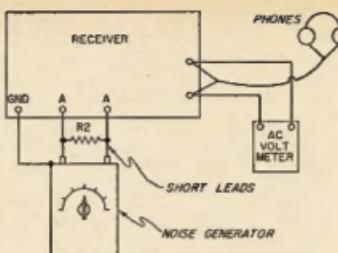


Fig. 2—A typical set-up for Signal-to-Noise Ratio Measurements.

out" when a 50 ohm input load is used. This is a handy thing to know if you contemplate a new receiver—especially if you are using RG-B/U feedline! Some receivers will exhibit plenty of gain and "hop," but will fall down badly when this acid test is used. Others will have good signal-to-noise ratios at some frequencies, and poor ratios at other frequencies. Some cannot be aligned properly at both ends of the bands! You might also find that maximum signal-to-noise settings of the r.f. padders and trimmers do not coincide with the settings for maximum gain. This will really throw you for a loss if you are aligning your receiver by the signal pick-up method! If the receiver is aligned by ear, it would not be aligned for best signal-to-noise ratio.

By using this noise generator it is easy to obtain the maximum results from your particular receiver. If these maximum results are not good enough for you, it will give you a reliable guide for testing the efficiency of the changes that you make.

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VK6DW	3	1
VK3RR	8	1
VK3HT	7	1
VK2AEZ	10	1
VK3XA	11	1
VK3GM	12	1
VK3ACL	14	1
VK2ED	16	1
VK2HO	17	1
VK3ABC	8	1
VK3WH	15	1

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VK5RU	16	VK4WJ	22 122
VK3BZ	3	VK4DO	20 116
VK4FJ	21	VK4JP	8 114
VK3IE	10	VK5MS	28 108
VK4KS	9	VK3WV	24 106
VK6KX	4	VK3HO	25 103
VK3ATN	26	VK4ADT	13 102
VK3AFW	11	VK2ZAH	15 102
VK3AJFW	7	VK3EJ	18 101
VK3JE	16	VK3GG	8 100
VK2ZO	23	VK4SLC	27 100
VK3CX	26	VK3AU	30 100
VK3RX	23	VK7TLJ	24 114
VK3RU	19	VK4ADA	7 113
VK3BZ	6	VK3PH	81 134
VK3FT	15	VK4RF	11 135
VK3BZ	19	VK3PT	37 134
VK3BK	10	VK3YD	2 132
VK4FJ	29	VK3EK	3 132
VK4EL	9	VK3ZJ	25 118
VK3BS	45	VK3PL	36 117
VK3ZO	26	VK3WM	12 116
VK3CX	26	VK3OY	4 114
VK3RX	23	VK3AP	14 114
VK3RU	19	VK7TLJ	17 118
VK3BZ	15	VK3LZ	18 118
VK3GW	19	VK3IC	10 107
VK3SA	28	VK3XX	40 104
VK3BSO	33	VK3KWW	45 104
VK4GL	36	VK3ZJ	45 104
VK3ZO	20	VK3YC	34 103
VK3CX	34	VK3G	30 103
VK3ZW	4	VK3ZAP	14 103
VK3QL	5	VK3NC	18 101
VK3ZO	30	VK3ZOA	32 101
VK3JE	21	VK3TRK	28 100
VK3YL	39	VK3PAZ	32 100
		VK4RW	47 100

### C.W.

Call	No. Ctr.	Call	No. Ctr.
VK3BZ	6	VK3PH	81 134
VK3FT	15	VK4RF	11 135
VK3BZ	19	VK3PT	37 134
VK3BK	10	VK3YD	2 132
VK4FJ	29	VK3EK	3 132
VK4EL	9	VK3ZJ	25 118
VK3BS	45	VK3PL	36 117
VK3ZO	26	VK3WM	12 116
VK3CX	26	VK3OY	4 114
VK3RX	23	VK3AP	14 114
VK3RU	19	VK7TLJ	24 114
VK3BZ	15	VK4ADA	7 113
VK3LZ	19	VK3LZ	17 118
VK3IC	18	VK3IC	18 118
VK3XX	28	VK3XX	10 107
VK3KWW	33	VK3KWW	40 104
VK3ZJ	36	VK3ZJ	45 104
VK3YC	20	VK3YC	34 103
VK3G	34	VK3G	30 103
VK3ZAP	4	VK3ZAP	14 103
VK3NC	5	VK3NC	18 101
VK3ZOA	30	VK3ZOA	32 101
VK3TRK	21	VK3TRK	28 100
VK3PAZ	39	VK3PAZ	32 100

### OPEN

Call	No. Ctr.	Call	No. Ctr.
VK3BZ	6	VK3LC	51 118
VK3ACK	8	VK3LZ	23 116
VK4HR	214	VK3VQ	45 116
VK3BZ	8	VK3YD	51 116
VK3BU	8	VK3ZJ	14 113
VK3JE	13	VK3ZJ	25 118
VK3NS	19	VK3PL	38 111
VK4WP	10	VK3MM	49 111
VK3SKW	13	VK3ZB	21 109
VK4ED	3	VK3ZB	54 109
VK4DO	15	VK3KK	25 108
VK3ZK	16	VK3XK	50 107
VK4ES	24	VK3XK	18 106
VK3AW	49	VK3ZB	59 106
VK3AWW	45	VK3ZB	59 106
VK4RP	52	VK3ZT	58 106
VK3VQ	27	VK3ZT	58 106
VK3PL	28	VK3ZV	15 104
VK4WP	40	VK3ZP	44 104
VK3EHT	41	VK3GPW	17 103
VK3MC	5	VK3HZ	20 103
VK3DZ	17	VK3KB	20 103
VK3DX	22	VK3VS	57 103
VK3DD	136	VK3VS	57 103
VK2ADE	28	VK3TRK	31 102
VK3LZ	33	VK3TRT	38 102
VK3AHA	2	VK3SH	51 101
VK3AHM	125	VK3TG	39 100
VK3PG	47	VK3TG	124

# TWIN-LEAD "SPRIGS"

## TWO ANTENNA TO ONE FEED LINE

BY G. M. BOWEN,\* VK5XU

For those v.h.f. enthusiasts who place a 144 Mc. beam above the 50 Mc. one and find that having more than one feed line is either too costly or inconvenient, this article, gleaned from the "Technical Section" of Sylvanian News, should be the answer. I particularly specify these two bands because they are not related harmonically. The arrangement will not work on 144 and 288 Mc., for example, because all the acceptor and rejector stubs or "sprigs," as they are referred to in the States, are quarter wave or three-quarter wave lengths.

The unit is constructed from twin lead with a velocity factor of about 0.82 and can be located at the head of the tower or mast. In the usual way the flat ribbon can be changed for open lines as soon as the rotating section is cleared. If two receivers are required, for example to work duplex cross-band, it is possible to develop a similar network for inside the shack.

Basically, the filter in each line from the antennae functions on the principle that an electrical quarter wave, when shorted at one end, presents a very high impedance at the open ends to any signal at the resonant frequency. In other words, it acts as a rejector circuit when placed across the transmission line as in Fig. 1.

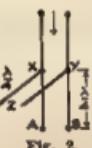


Fig. 1.

Fig. 2.

If the stub is an open quarter wave, then across X and Y (Fig. 2) there will be a short circuit equivalent to an acceptor or series resonant circuit, but across A and B a high impedance to any resonant frequency signal. Thus the non-resonant incoming signal in Fig. 2, shown by the arrow, will be passed by X and Y since the impedance at X and Y is high. So it reaches AB, which is the junction of the feeder to the shack. The resonant frequency signal looking into the filter from AB will see a rejector circuit because it sees a half wave made up of AX and XZ.

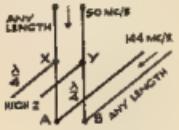


Fig. 3.

Fig. 2 will therefore develop into Fig. 3.

However, it will be seen that the 144 Mc. antenna and its feed line will possibly short out the 50 Mc. signal, so it will be necessary to insert a filter in the 144 Mc. line to place a high impedance at AB to the 50 Mc. signal. This is illustrated in Fig. 4.

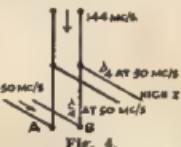


Fig. 4.

Combining these two filters to reject the 144 Mc. signal from one antenna and the 50 Mc. from the other, we arrive at the arrangement shown in Fig. 5.

Two quarter wave sections placed a quarter wave length from the junction of the two leads create high impedances

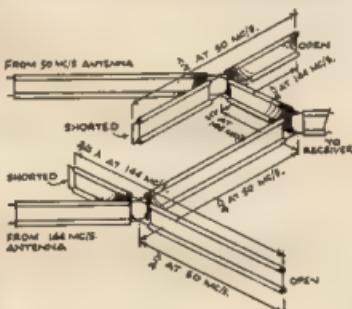


Fig. 5.

Length of Sections—  
Quarter Wave at 50 Mc.—47 inches  
" " 144 " —17-5/8 "  
Three-quarter " 144 " —35-7/8 "

### AMATEUR BANDS AVAILABLE

*1.84—	1.86 Mc.	†288—	298 Mc.
3.5—	3.8 "	†576—	585 "
7—	7.15 "	1,215—	1,300 "
14—	14.35 "	2,300—	2,450 "
21—	21.45 "	5,650—	5,850 "
26.96—	27.23 "	10,000—	10,500 "
28—	30 "	†21,000—	22,000 "
50—	54 "	†30,000 Mc.	and
144—	148 "	Above.	

\* Available for emergency network purposes only. Normal Amateur activities are not permitted in this band.  
† Temporary allocations.

because they are left open at their ends; in simple language, they reject the unwanted signals from the wanted ones!

If you study Fig. 5 carefully you will easily find the high and low impedance points. The two shorted sections can be earthed, since they are at voltage nodes, and the open ends should be supported away from any part of the beam structure. In Fig. 5, for the sake of clarity, the plastic ribbon has been shown as cut away at the junctions of the lines and the stubs. However in constructing the net-work, as much of the plastic as possible should remain in between or the sudden change in dielectric will create bad reflections.

Although originally designed for t.v. reception, it still can be used as a frequency selective net-work into which two transmitters can be fed. A single feeder then goes to a similar network which will divide off each signal to its appropriate antenna.

For successful operation of such an ideal arrangement, very careful matching of feed impedances is necessary. Otherwise if standing waves appear on the feeder, the filter network will become unbalanced. When used for receiving only, the matching into the receiver input impedance is important and the line must see its own impedance.

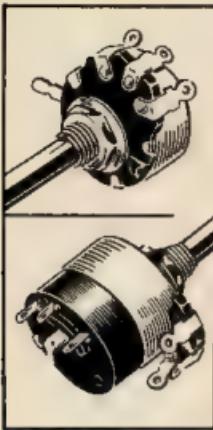
### HINTS AND KINKS

#### WEATHERPROOFED RIBBON FEEDLINE

300 ohm flat ribbon, of the light grey variety, does not take kindly to exposure to weather and after a few months in wind, rain and sun, cracking and subsequent conductor oxidation sets in. If, however, you enclose and seal the feedline in p.v.c. flexible sheathing, the outcome is a line comparable with the tubular kind. You can even use the old garden hose—or the newer plastic kind. Sealing, particularly at the elevated end of the feedline can be done effectively by applying first a coating of Pliobond adhesive with a final covering of Bostik or similar adhesive—VK2NO.

#### 24 VOLT RELAYS ON 12 VOLTS

Most of the relays found in ex-war gear are designed for 24 volt operation, and if used on 12 volts, do not have enough pull. In the case of two bobbin 24 volt relays, however, a simple modification will render them suitable for the lower voltage. Re-connect the two windings so that instead of series connection they are in parallel. Make sure that the polarity is correct, i.e. that the inductances aid instead of "bucking." VK2NO.



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# MAX HOWDEN, VK3BQ

BY VIVEZ

**A**NYONE who tunes the 144 Mc band knows Max Howden, VK3BQ, because he is one of our most active men on this band, and if you live within a mile and a half, as I do, will testify to the efficiency of the 45 watt signal radiated from that station.

To see how he does it, I paid him a visit and now pass on my findings so that we all might learn first what his ideas are on v.h.f. generally.

Max, as we all know, is one of our pioneering Amateurs who first came into the limelight in May, 1923, when he won the Trans-Pacific test by logging 22 stations. The band used was 150-250 metres, for in those days all wavelengths below about 250 metres were allotted to Amateurs. The receiver used to win the contest is now in the Victorian Division rooms.

In the following year, with the granting of transmitting licenses, contact was established on c.w. with W6AHP on 2nd November, 1924, and then G2OD in England on 13th November, 1924, also on c.w. The wavelength used was 87 metres, which was v.h.f. in those days. QRM was bad in the United States because about 22,000 Amateurs were licensed at that time, and to avoid this, the VKs pushed a little higher in frequency.

Since those early days, Max has retained his interest and has always been found helping to pioneer the higher frequencies. In 1938 I can remember him on the 28 Mc. band, which, with 56-80 Mc., was quite high frequency in those days.

Today his interest is mainly 144 Mc. and being a keen experimenter, he favours the breadboard type of construction.

The transmitter is fairly conventional, consisting of a 6AG7 triad, with output on 24 Mc., 5763 doubler, 2E26 tripler, and 629B final, with an input of about 45 watts. This feeds a beam aerial which we suspect is the main reason for that terrific signal.

This beam is virtually three 4 over 4 beams, side by side and fed in phase, making 24 elements in all.

Two horizontal longerons, one above the other, are attached to the mast at their centres, and the booms of the four element sections are attached at right angles to this.

Bracing is carried out with 100 lb. nylon fishing line, and Max is most enthusiastic about the way it does the job. Nylon line possesses quite a deal of elasticity and allows the elements to give slightly in heavy gusts of wind. If you are keen on fishing, you will know how very strong this nylon line is.

Speaking of the beam generally, Max does not think the addition of the third 4 over 4 was worth the effort involved and considers that for all practical purposes the pair of 4 over 4's he had up previously was nearly as good from a result point of view and a lot less complicated to phase and match properly.

His only hint was to make sure that the pole passing up between the pairs of four element beams is a wooden one, as the losses are high with the ends of the elements near a metal pole.

Rotation of the beam is done by means of a shaft down the centre of the tower, driven by a right angle drive from inside the shack. An old motor car steering wheel does the turning.

The beam is extremely sharp and a variation of 10 degrees will cause a noticeable drop in signal strength.

The receiving side is handled by an AR88 receiver fed from a crystal locked converter, and it was this converter which caught my eye.

The signal to noise ratio was extremely good and the stations being received stood out with a perfectly quiet background. This was most noticeable on the country stations.

The converter uses a 6J6 neutralised 1st r.f. closely coupled to a 6AK5 2nd r.f., operating with only 8 volts on the screen and 100 volts on the plate. One half of a 6J6 is used as the mixer, again with only 8 volts on the plate, whilst coupling to the AR88 receiver is taken off the cathode. The plate of the other triode is left floating and oscillator voltage is injected through the grid of this second section.

An 11 Mc. crystal in a regenerative circuit, using a 6SH7, feeds a 6AK5 harmonic amplifier which in turn feeds into the 6J6 grid mentioned previously. The output of the 6SH7 is at 44 Mc., and the 6AK5 at 132 Mc., which beats with the incoming signals to give output in the range 12-16 Mc.

Max attributes the low noise of the converter to the triode 1st r.f., the use of low screen volts on the 6AK5 2nd r.f. and also the 6J6 mixer plate. In any event, he has found this converter superior to the cascade front end.

He passes this suggestion on to all who strive to build the ultimate in converters for v.h.f. bands. "If you are not satisfied with the converter you have, don't pull it down, build another one and then you will have the old one as a standard of comparison. If the new one is better—then pull the old one down, but not before."

Sound advice from an "Old Timer" who is still in the forefront of Amateur Radio today, and a leader in the latest techniques.

To cap our visit, a break-through occurred to Tasmania and VK7PF and VK7LZ were worked. This rounded off a very interesting evening, from which we made two interesting observations. Amateurs, no matter what age, retain a youthful enthusiasm which keeps them young and alert, and also that Max's years of experience are standing him in very good stead when it comes to modern v.h.f. work.

## NATIONAL FIELD DAY

NOW ON SUNDAY, 3rd APRIL

This Contest, which was previously postponed owing to the Flood Emergency in New South Wales, will now be held on Sunday, 3rd April, 1955.

The rules were published in February, 1955, "Amateur Radio." Rule 1 is now amended to read "Sunday, 3rd April, 1955," and Rule 9 (return of logs) to read "Saturday, 30th April, 1955."

Remember, Contest is on Sunday, 3rd April, and logs are to be returned by Saturday, 30th April.

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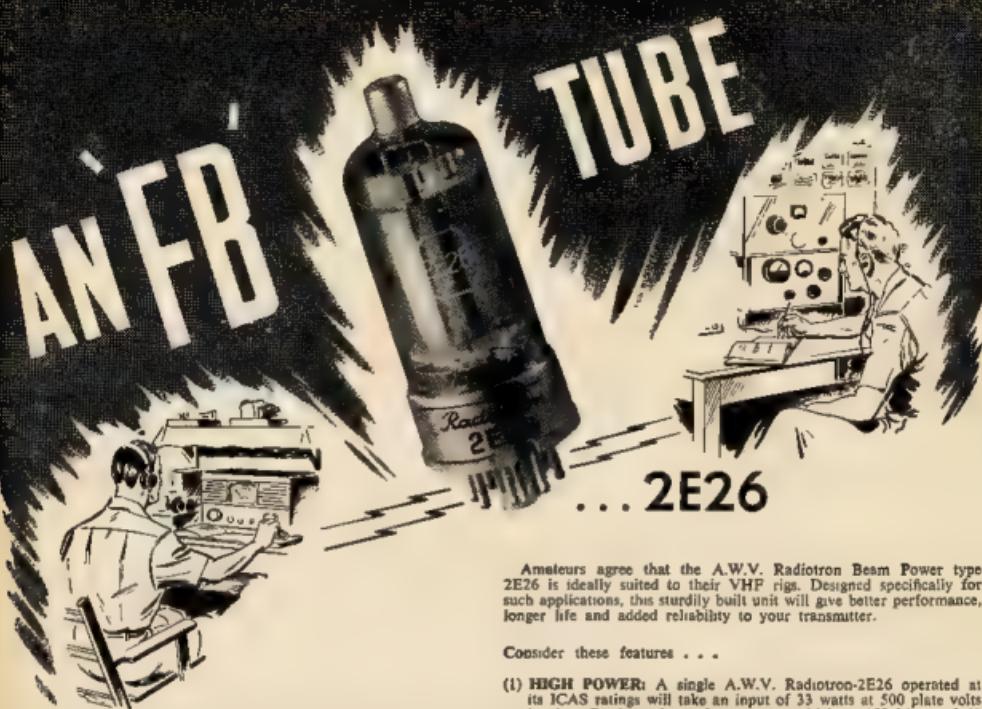
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Type	Heater Volts	Dimensions in Inches		Transcon- ductance	Max. Plate Ratings		
		Length	Diam.		Micromhos	DC Volts	Dissipation (W.)
2E26	6.3	3.21/32	1 5/16	3500	700*	115.5*	
#12	10.0	7 1/4	2 9/16	3750	2250†	125 †	
807	6.3	5 3/4	2 1/16	6000	750†	30 †	
Max. Plate or Anode Ratings							
Peak Inv. Volts		Amp. Av.					
10,000		0.25					
Operating Volts		Operating Current DC MA					
		Min. Max.					
OC3	—	4 1/8	1 9/16	108	5	40	
OD1	—	4 1/8	1 9/16	153	5	40	

\*For Interim Mobile Service.  
†For Intermittent and Commercial Amateur Service.

Amateurs agree that the A.W.V. Radiotron Beam Power type 2E26 is ideally suited to their VHF rigs. Designed specifically for such applications, this sturdily built unit will give better performance, longer life and added reliability to your transmitter.

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- (1) **HIGH POWER:** A single A.W.V. Radiotron-2E26 operated at its ICAS ratings will take an input of 33 watts at 500 plate volts in class C telegraphy at frequencies as high as 150 Mc., and 40 watts at 600 volts at 54 Mc. It will take an input of 22.5 watts at 415 plate volts in class C telephony at frequencies as high as 150 Mc., and 27 watts at 500 volts at 54 Mc.
- (2) **LOW DRIVE:** At 144 Mc., about 2 watts of RF must be delivered to the grid circuit. A 6V6-GT is a satisfactory driver tube.
- (3) **ECONOMY:** Small in size with high power sensitivity, and high efficiency the A.W.V. Radiotron 2E26 makes an excellent final amplifier for a compact, inexpensive VHF transmitter operated from a simple low-voltage power supply.
- (4) **CONSTRUCTION:** The 2E26 has short internal leads, a rugged button stem fitted to an octal base having a low-loss mica insert and metal sleeve, excellent inertia shielding, and double-ended construction for isolation of grid and plate circuits.
- (5) **APPLICATIONS:** The 2E26 is an excellent medium-power final amplifier for 6 and 2 metres. As a doubler, it will supply more than adequate power to drive an 829-B or 815. It will deliver 15 watts of 2-metre RF as a TPTG oscillator.



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# DENMARK PAYS A TRIBUTE TO VKIEG

The following letter, which is self explanatory, has been received from Borge Peterson, OZ2NU, and we publish the letter, together with the enclosure as received.

Box 335, Aalborg,  
Denmark.  
24/11/54.

Editor "A.R."

Dear Sir and Friend,

I am sure it is not often that you receive material for your magazine "Amateur Radio" from Denmark, but I am sure that you will allow the enclosed article to be published in your magazine. We are proud of the fact that the Australian Government has found the Danish ship "Kista Dan" useable for the expedition to Robertson Land and Mawson.

Your Amateur friend, who is writing and sending this, is happy to have been working with the building of the ship and to have had the opportunity a few days ago to hear a lecture on the voyage to Robertson Land by Captain H. Petersen, the chief on "Kista Dan," during its stay here on the yard where it was prepared for its next trip to the Antarctic.

With my best compliments and 73,

BORGE PETERSON, OZ2NU,  
Shipbuilding Engineer, and  
Traffic Manager E.D.R.

## ACKNOWLEDGMENT TO BILL STORER, VKIEG

It is always appreciated by DX hunters when someone in the ranks of Radio Amateurs makes it possible to "get" a new country. We know of several cases during the last few years as announced in the DX columns of the different Amateur magazines. One of the most well-known through 1954 has been Bill Storer, VKIEG, on Robertson Land in the Antarctic. We remember also the Chilean Expedition to Easter Island earlier in the year (1954).

It is of interest that both the ships which have been used by these two expeditions were built on the shipyard at Aalborg in Northern Jutland.

The "Kista Dan" has for a few days been back here on the yard for a necessary "make up" before going down again to the Antarctic. The writer was happy to be present during a lecture given by Captain H. Petersen, chief of the "Kista Dan," who told about the voyage to Mawson and about the people making the expedition.

As a Radio Amateur and as one of the builders of the two ships mentioned, the author takes the opportunity to greet the men who have been pioneers and furthermore, have been excellent ambassadors for the Radio movement.

The expression of gratitude isn't coming from the writer alone, but from innumerable places around the world, from DX operators favoured with contacts with Bill in the Antarctic.

In the spirit of this, the Traffic Department of E.D.R.—the Experimenting Radio Amateurs—has awarded a certificate of acknowledgment to our Amateur friend Bill Storer, VKIEG, and our thoughts are following it on its way down South with the "Kista Dan" struggling its way through the Antarctic Ocean—an effort worth a certificate in itself.

Thank you Bill, a thank you from our hearts.

## THE DOWNS ZONE Q'LAND DIVISION W.I.A.

are holding a

## CONVENTION at PALM BEACH on 30th APRIL, 1st and 2nd MAY

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A Scramble will be held on 30th April and 1st May. Try and contact these stations.

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## AUSTRALIAN V.H.F. RECORDS

TWO-WAY WORK			
Band	Stations	Date	Miles Rec'd
50	VK5HCL-WIACB/KHS	26/5/47	2300
	VK5HM-VRCB	20/12/53	8400
	VK7BQ/LZ-VK5DB	—	3211
144	VK5GM/3-VK5LZ/PF	9/3/53	317
288	VK5AF/3-VK5AA/F/3	21/3/54	63.8
575	VELANW-VKAEE	11/12/49	81.6
1215		—	—
2300	VKAJN-WVKIXA	18/3/50	8.1
2650		—	106
30000		—	—
30000		—	800 ft.

It is in the interests of all v.h.f. enthusiasts to notify F.E. through Divisions, if you can better the above figures. Please give exact details of both stations' locations for checking when submitting your records.

## POLICE NOTICE

One thousand microfarads reward is offered for the capture of Hop Along Capacity who escaped from Pushpull Primary Cells yesterday armed with a carbon rod. He is wanted for the induction of an 18 year-old coil. Pushpull E.M.F. have been searching the magnetic field for amperes hours. It must be noted that when cornered he will offer great resistance which must be neutralised. Ohm town dielectric agents please pick up and relay.

## CHANGE OF ADDRESS

W.I.A. members are requested to promptly notify any change of address to their Divisional Secretary, not direct to "Amateur Radio."

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Cat. No. 580	Single Section 12.5 pF.	14/4
Cat. No. 581	Single Section 60 pF. (screwdriver adjust.)	18/5
Cat. No. 582	Single Section 64 pF.	18/5
Cat. No. 483	Split-Stator 15 x 25 pF.	18/11
Cat. No. 584	Butterfly 34 x 24 pF.	17/11
Cat. No. 585	Single Section 100 pF.	25/2
Cat. No. 586	Single Section 140 pF.	24/7
Cat. No. 587	Butterfly 15 x 15 pF.	18/8
Cat. No. 588	Single Section 27.5 pF.	16/4
Cat. No. 589	Single Section 64 pF.	18/5
Cat. No. 738*	Single Section 100 pF. (describ end plates, for use in Oscillators and V.F.O.'s)	22/10
Cat. No. 738	Butterfly 8 x 8 pF.	20/6
Above Prices subject to sales Tax at 16-2/3% * Cat. No. 738 at 12½% Sales Tax		

### ● EDDYSTONE MINIATURE MICRODENSERS—

Cat. No. 581	Butterfly 25 x 25 pF., 90 degrees rotation	27/8
Cat. No. 582	Split-Stator 25 x 25 pF., 180 degrees rotation	25/2
Cat. No. 583	Single Section 50 pF., 180 degrees rotation	25/7

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# SHORT WAVE LISTENERS' SECTION\*

## VICTORIAN MONTHLY MEETING

The meeting was held in the rooms at 181 Queen Street, Melbourne, on 2nd February, 1955. After the normal business, Garrett Lane gave a lecture on 3 m equipment. A new member for the month was Don McDonald, of Albury. Good DX. Don Martin closed at 2215 hours.

**A.R.C. Visit:** On Wednesday, 23rd February, the members of the VK3 Division visited the Melbourne Studios of the Australian Broadcasting Commission. Some 150 listeners turned up, including Arthur SAED. All had a very interesting time and we thank our hosts of the A.R.C. for conducting the very informative tour.

## NEW REPORTERS

I would like to say welcome to Ted Bayley, of Ballarat. Ted is a P.M.G. linesman and has been an a.w.l. for some 15-20 years. He uses a 6-tube Bairdarts Sky Champion and a WJSK beam. He has received QSLs from 12 countries and 20 states.

From Rod de Belfast of Launceston, we received a very healthy list of reports. Rod uses a 2-tube t.r.f. receiver, using a 6U7 and 6L6 with a half wave end fed Zapp on 40 m.

To Rod and Ted may you have a good season of DX.

## CALLS HEARD ON THE BANDS

144 MEL SATN. JYS. JLN. SZAW. SZAF. JALW. JUE. SZAA. 3.8 Mts. W6. W0. W7.

14 Mts. ZL. ZM6. W6. W3. KC6. KH. HF. HIN. ZC. ZD. ZE. ZF.

14 Mts. W3. KHR. W8. ZL2. W9. W1. KHZ. W2. PY2. W7. C6S. CNE. 3W. 4X4. GDS. FB. F9. DL3. YV5. VKI. VK8. ZSI. CO2. CSE—these

from Frank Nowland and Geoff Morris. From DICKY, ZL2, ZL3, ZL4, ZL5, ZL6, ZL7, ZL8, Michael Ide CT1, EA1, HK3, KAS, KAS, KAT, A0, KC5, US2, W5, VE7, OEL, KHR, KC6, KJ5, W5, W7, YV, 487, W2. HP3FL.

21 Mts. From Frank and Geoff: WEAL, WECBE, VK8DE, VR3CO, W9GNT, WEY, W4VWW, A1A6A.

## SOUTH AUSTRALIAN S.W.L. GROUP

Jim Paris, of Prospect, S.A., has forwarded news of the VK5 Division forming an S.W.L. Group.

On their first meeting, seven members turned up and they received enquiries from another six groups.

To the VK5 S.W.L. Group we have in VK3 who you all the best and a highly successful group.

## S.W.L. REPORT FORMS

The Victorian Division of the W.I.A. have issued printed S.W.L. Report Forms which are available from the rooms at 181 Queen Street, Melbourne, for a small fee of 1/6 per 50 sheets.

## SEND CORRECT AND DETAILED REPORTS

We have received from overseas Amateur Stations details which show that Australian a.w.l.s. are sending false and uninformative reports and expect 100 per cent QSLs from the stations concerned. Your report must be accurate and to the point and must contain the detail which is required by the transmitting station.

Reports should contain information on the frequency used with the station is working date, time G.M.T. and your local time, signal strength, readability, fading, interference, weather conditions, programme heard, your receiver details (including number of valves), your antenna, power input and height of same, your name and address.

To members of the W.I.A. you may send your reports via the QSL Bureau for a small fee, and they will go much cheaper than by ordinary mail. If you do not want your reports to go to the QSL Bureau, you will have to send them to your QSL card, which include a International Reply Coupon with each report. Just place the report and reply coupon in an envelope and place the call sign of the station on the envelope and forward to the Outward QSL Manager of your Division.

## S.W.L. REPORTS

Many short wave listeners have from time to time reported reception of a station and because that station does not normally issue verified reports in the usual form, their report is unanswered.

A form called "Prepared QSL" was used by many a.w.l.s. during and immediately after the last war. However, their use still stands good.

\* Compiled by John Wilson, 37 Rayment Street, Alphington, Vic.

where many Amateur Stations who have no records of a call block is exhausted, will favour you with a reply.

But a report should consist of more than is customarily found in reports, such as: Up to 1000 hours hrs. G.M.T. on 20 m. metro phone. Wag type 1000. Please QSL.

That kind of report is of no help to anyone. Stations prefer to know just how well their signals are received. Many overseas short wave broadcasting stations usually are well informed by means of reports from listeners advised as to where the signals will reach a given location. But even the best of predictions can go astray and a report or report from listeners go a long way in compiling accurate details of the station's range.

For any Commercial Broadcast or Short Wave Broadcast Station, the minimum report should be 30 minutes. Containing sufficient material to enable the station to determine the time announcements, musical Repertoires etc., should be identified where possible and an accurate time given for beginning and commencement of news. For best results use Greenwich Mean Time. In hours, better still, International Time.

Often a careful check can be made with a sheet of graph paper which can be divided into two parts. The upper part represents strength and readability, the lower part represents time and whether you are filling in a portion of time. If there is a gap in your log book, each minute mark a point on the graph sheet. When your listening time is over, join the points and you will then have a good idea of the time you have maintained over the listening period. Signal strength could be compared with a signal strength meter or by a scale devised yourself following the directions on the bottom of the Official Report Form forwarded from the Group.

You may then forward your report on appropriate form, together with your graph, and forward same to the station. Station addresses should be featured from time to time in this magazine.

For a reply, enclose stamp to cover return postage in Australia only. Outside Australia, but not in British Empire, Imperial Reply Coupons outside writing. Enclosed with the U.S.A., use an International Reply Coupon. Don't forget, a good report usually receives an early reply. Good luck in your reporting.

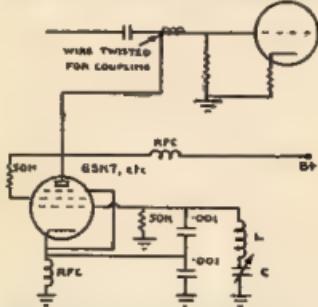
Suggested outline for prepared QSL.—  
To: Own Name and Address.  
I/W acknowledge receipt of your report dated \_\_\_\_\_ reporting reception of station \_\_\_\_\_ operating on \_\_\_\_\_ Metres on \_\_\_\_\_

(date) \_\_\_\_\_ (time, G.M.T.). Station \_\_\_\_\_ was operating using a power output of \_\_\_\_\_ watts into \_\_\_\_\_ antenna, radiating in \_\_\_\_\_ direction.

This certifies that your report has been checked against Station Log and found to be correct.  
I/W hereby confirm reception of Station \_\_\_\_\_  
Signed by Station Operator.

## S.W.L. HINKS AND KINKS SECTION

This month we publish a circuit of a Clapp Oscillator submitted by Bruce Ackland. Bruce suggests that this oscillator be used either as the main oscillator in your receiver or else as the second



oscillator in a dual conversion job, thus saving the cost of an expensive crystal. The Clapp oscillator is noted for its excellent stability and the fact that it is

not very sensitive to changes in valve capacitance, during the warm up period. Naturally, as with any oscillator circuit, only the best of components should be used and the most rigid construction employed if the best results are to be obtained.

## BROADCAST BAND

Radio Eireann, Ireland. Station at Athlone uses 100 kw. on 588 Kc.; Station at Dublin 5 kw. on 1250 Kc.; Station at Cork, 5 kw. on 1250 Kc.

Radio Eireann transmitters at both Cork and Dublin are new transmitters and are now fully amplitude modulated.

A 100 kw transmitter is to be installed in Athlone before the end of the year in replacement of the existing one which has been in use since 1933. The Athlone transmitter is capable of covering all parts of the country reasonably well, but the service areas of Dublin and Cork transmitters are limited.

Regular broadcast hours are as follows: 0800 to 0915, 1300 to 1430, and 1700 to 2330 G.M.T. On Sundays the hours are from 1330 to 2330 G.M.T.



OF COURSE YOU  
KNOW, BUT DO  
YOU DO IT?

Clean that Soldering Iron.

Clean those surfaces.

Use the right flux.

Clean off the surplus.

Test for dry joints. (Not to be confused with delicensed Pubs.)

\* \*

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MALVERN, VICTORIA

Phone: BY 3774

# "ACOS" CRYSTAL MICROPHONES and MICROPHONE INSERTS

*A Complete Range For Every Purpose*

## DESK OR HAND MICROPHONE

MIC 36



£6/18/6

Housed in attractive plastic case, this Microphone is ideal for home recording and public address, etc. Response unexcelled for its size and price. The performance is not affected by vibration, shock or low frequency wind noise. Omni-directional frequency response substantially flat from 30 to 7000 c.p.s. Recommended load resistance not less than 1 megohm dependent on low frequency response. Can be supplied complete with switch and floor stand adaptor as required at a small extra cost.

## HIGH QUALITY MICROPHONE

Designed to meet even the most exacting requirements, this Microphone incorporates the world famous floating crystal sound cell construction. Its special characteristics are that its fine performance is not affected by vibration or shock. The fidelity is not impaired by low frequency wind noise.

### SPECIFICATION

Recommended load resistance—not less than 1 megohm.

Output level— $-55$  db ref. 1 volt/dyne/cm<sup>2</sup>.

Frequency response—substantially flat from 30 c.p.s. to 10,000 c.p.s.

Directivity—non-directional.

Size— $2\frac{1}{2}$ " spherical diameter.

Connector—Standard International 3-pin.

MIC 16



£24/19/6

## GENERAL PURPOSE MICROPHONE

MIC 35



£2/15/-

substantially flat response from 50 to 5000 c.p.s.

### SPECIFICATION

Output level— $-55$  db ref. 1 volt/dyne/cm<sup>2</sup>.

Output impedance—approx. 4 ft. of co-axial supplied.

Weight—6 ozs. unpacked, 7 ozs. packed

Dimensions—microphone only  $2\frac{1}{4}$ " x  $2\frac{1}{8}$ " x  $\frac{1}{2}$ "

## MICROPHONE INSERTS



(MIC 32 illustrated)

## CRYSTAL MICROPHONE INSERTS

These inserts are available in varying sizes ranging from as small as  $15/32$ " square to  $1-13/16$ " round, with various thicknesses from  $7/32$ " to  $9/16$ ". Suitable for every purpose such as hearing aids, public address, tape recording, amateur broadcasting, etc., they have responses from 2250 c.p.s. to 3500 c.p.s. at 5 db to 30 db. Insert can be supplied with or without 10 meg. resistor as required.

MIC 32 insert, £2/15/6; all others, £1/19/6.

EXCLUSIVE AGENTS:

**AMPLION (A'SIA) PTY. LTD.**

SYDNEY, AUSTRALIA

## TABLE AND STAND MICROPHONE

This omni-directional Microphone is robust in construction, with a pleasing appearance. Vibrations, shock or low frequency wind noise will not affect the performance. The low frequency cut-off is dependent on the load resistance. The cut-off is given by the quotation,  $F = 80 + R$ , where  $F = \text{c.p.s.}$ ,  $R = \text{megohms}$ . An adaptor (floor mounting) is available at low extra cost.

MIC 22

### SPECIFICATION

Output level =  $-50$  db ref. 1 volt/dyne/cm<sup>2</sup>.

Output impedance—equivalent to approximately 0.002 uF. (0.8 megohm at 100 cycles).

Frequency response—substantially flat from 40 to 8000 c.p.s.

Recommended load resistance—not less than 1 megohm, dependent on low frequency response.



## LAPEL MICROPHONE

MIC 28

Designed to give freedom of movement, this Microphone is small and non-directional. Housed in a soft moulded rubber case, which gives protection against shock, it is provided with a pin at the rear of the case for pinning to the lapel.

### SPECIFICATION

Output level—approx.  $-55$  db ref. 1 volt/dyne/cm<sup>2</sup>.

Recommended load resistance—5 megohms. Frequency response—level throughout the whole of the audible spectrum.

Capacity— $0.0015 \mu F$ . at 1000 c.p.s.

Impedance—100,000 ohms at 1000 c.p.s.

Cord—6 ft. shielded cable.

Size— $1-9/16$ " wide x  $2\frac{1}{4}$ " long x  $\frac{1}{8}$ " thick.



£5/19/6

## HAND OR DESK MICROPHONE

MIC 33

This Microphone has been designed for the high quality public address and home recording field. High sensitivity and flat characteristics are obtained by a specially designed acoustic filter. Housed in an attractive plastic case with an unexcelled response for its size and price. Unaffected by vibration, shock or low frequency wind noise. Omni-directional frequency response substantially flat from 30 to 7000 c.p.s.



£6/18/6

## MICROPHONE INSERTS



(MIC 23 illustrated)

## DX ACTIVITY BY VK3AHH<sup>†</sup>

## PROPAGATION REPORT

3.5 Me Times of openings and quality of overseas conditions were relatively reliable throughout the month. Europe was represented between 1830 and 2000s and North America around 0800-1300s. The Pacific Islands and the

**Far East** broke through between 0800 and 1200Z. **7 Me** Here conditions have also been fair to good with European and North African break-throughs over the long path 0700-1200Z and along the short route 0700-1100Z. Openings in both the long and short routes can also be reported for North America (2000-2300Z and 0700-1400Z). Occasionally, South American conditions could be noticed around 0800-1000Z 0800-1400Z was the period for the Pacific Islands and South East Asia.

14 Me. This band provided reasonable conditions when open. Contacts with all continents have been reported. Times for Europe were 0400-1000z and 1100-1600z. North American contacts were possible around 2100-2400z and 0300-0900z with some erratic break-throughs at other times. Openings to Africa existed during the periods 0800-1000z, 1200-1300z, and 2200-2400z. Conditions to South America were reported as 0300-1000z.

21 Me. More or less regular openings to North America have been reported 2200-2300z. Three European break throughs have been observed in Victoria (on the 6th, 8th and 28th February).

97-28 Me - According to a report, this band had been open to California.

## NEWS AND NOTES

While continuous, heavy rain hit New South Wales, while abnormal weather conditions caused extensive floods, the **Radio Amateur** was in the mind of all who were concerned with this catastrophe. Where communications were cut, where food and other essentials were needed by country towns and areas, he offered his helping hand, his expert-like performance, his ability and training. Very efficiently organised by the N.S.W. Division, smooth and orderly traffic was maintained at all times. Once again, this proved to authorities and public that, in emergencies, Amateurs—proficient in operation and technique as well—secure most reliable communication. Thus let us join in with this word of praise to the VK2 Amateurs for a job well done!

With monotonous regularity, day follows day, month follows month, year follows year, and cycle follows cycle! Yes, the good old Sun has spots again! Jokes aside, it may now be stated that the number of sunspots is increasing steadily. As is generally known, the exact time of the actual minimum cannot be recognised accurately until a year or so after, which was one reason for your scribe to hesitate with such announcements. However, it now seems to be certain that the slope is positive. Thus we have entered a new cycle and can look forward to a gradual improvement of DX conditions on the 27-28 Mc and 21 Mc. bands. Here we like to offer our word of appreciation to those Amateurs who, during the tedious minimum period reported on 27-28 Mc. conditions, namely, VIKS, 2A1J, 3YS, 3YT, 4EL, 4TN, 4XJ, SHI, 9CW and a.w.l. Jim Hunt,  
1055 Main Street, Monmouth Island, N.S.

The 1955 team on Macquarie Island, the VKs 1HH, IDC, and 1ZK, have now commenced operation while, at time of writing, the expedition ship Kista Dan is on her way back from Antarctica and is now expected to arrive in Melbourne in the last week of March or beginning

- \* Hans J Albrecht, 10 Belgrave Ave., Box Hill North, E.12, Vic
- \* Call signs and prefixes worked.

zero time—G.M.T.

of April. Welcome home to VK1DY,  
VK1PG and VK1EG!

**VQ6LQ**, now on leave in G land, will return in April. **HB1MX/HE** is frequently active from Liechtenstein on three bands, namely 7, 14 and 21 Mc.

The list of active VP8 stations is as follows: Antarctica—VP8BP, VP8AO; South Shetlands: VP8BX, VP8BY; South Orkneys VP8AQ.

**KC6ZB** will leave Yap Island early in April for vacations.

The W.I.A. Olympic Games Committee (3TE and 3AHH) has co-opted Max ZS2S. Considerable preparatory work has been done. Readers will be kept informed through this and other channels.

Noel, 44 Chem

Pointe Pitre, Guadeloupe, F.W.I.  
HZ1AB 244th Air Base Squadron M.A.R.S.,  
A.P.O. 618C, C/o P.M., New York, N.Y.  
E13L Sam Butler, Monrovia, Liberia.  
VQAR: Fiorel, Mauritius.

## ACTIVITIES

23 Me : Frank TQL heads the list with W8\*, W6\* and NM5HD. DL G. LIZKSP YU5AB KP4CC, DUTSV, KR6LJ, KHV6 Neil 3BQ follows with W1\*, W1\*, W8\*. Eric BERRIBA heard DUTSV, KP4CC, W6 IAHFH's log shows numerous Ws\* and GSYQ, KR6LJ, NM5HD, L5CCE, F5DNE.

VE, EAJIE, CTIPK, DL, YU, HCKG,  
EASAZ, CSWY, VRZCG, Austin, SD, YU, HCKG,  
G\*, DU, HZIAV, KA, VU\*, JA, KRS,  
HIFC, VY\*, DL, HZIAV, PNT, VY\*, HCKG, VOS,  
JASAZ, VFB, HZIAV, PNT, VY\*, HCKG, VOS,  
XZ20V, FARAK, G, CNANM, BERSBIS,  
KPAZ, VSICP, Jim, Hnt, BNT, GW, GM, GMBQ,  
ISIBV, SM, HBT, DL, 4X4AS, CTIC, OF,  
OZTBZ, YAM, OZTH, SWVO, OZIGC, M, GMBQ,  
OZTBZ, YAM, OZTH, SWVO, OZIGC, M, GMBQ,  
OZSAB, QXDC, G, VSZER, FRA, ASVYL,  
VUZRC, VUFXN, XZ20M, VSUVA, VKIPI,  
ETZDU, F7SWB, ZS15M, VQFKP, VNAQ,  
ETZM2, CXAAP, P12AHS, C2BL, KZSD,  
ETZM2, LUNA, FARAK, Dave, tenk1, OA2A,  
ETZM2, QNNS, VYHTA, VE2AS, G, VY3BB,  
ZD4PP, CTICL, OZ6BA, CTICK, VS2EB,  
VYERF, KRS.  
Hi - Me. Austin JWS QSO reported on phone, HCIPS  
and VSIFE. Jim Hunt heard DLIVX, GHCUV,  
GHD, CRDQY, GM3A, ZBDR, GRABH, GED,  
GEWD, HZIAV, ODSAJ, HBV, YU, AIBAO,  
VUET, VU2CW, VUZY, VSIFE, VS3BB,  
VRZC, JA, KA, KGS, KHO, DUVS, HCIPS.

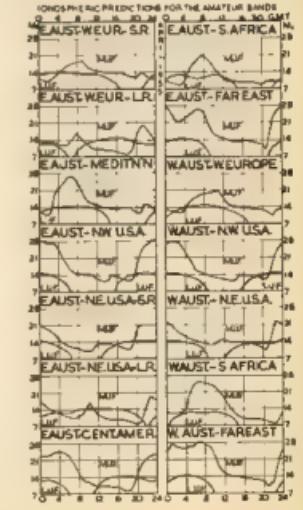
HCPL, Ws.  
27-28 Mc. Jim Hunt heard one Ws.

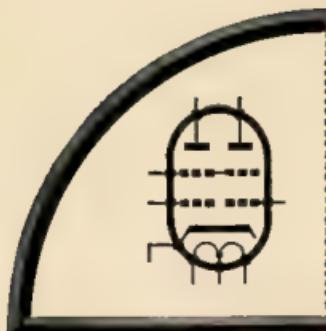
Barn QSLs were received by:  
—SAH ZSC  
—VWLL VFTNG, CXSAT FAJYI  
VTPK'S 2400Z 2410Z MC-1000  
SWG: LASYE FAZSH, CNISF FIBA, HCIGP  
BERNIN DUTSY 13.5 Mc. FASDF, HBMX  
HE, ITITAI MP4KAC, OA4BN, VQ1CF, VQ4RF,  
SAYA 9348.

## SUBSCRIPTIONS

- Please pay your Subscriptions PROMPTLY when due. Failure to do so may result in the loss of valuable issues of "Amateur Radio." High costs of production make it necessary to limit the number of extra copies printed each month.

## PREDICTION CHART FOR APRIL, '55





PRINCIPAL CHARACTERISTICS OF THE QQQV03-20*					
HEATER	Series			Parallel	
V <sub>h</sub>	--	--	12.6	--	6.3 V
I <sub>h</sub>	--	--	0.40	--	1.2 A

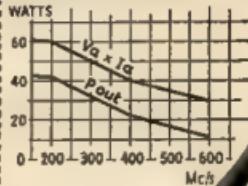
#### CAPACITANCES

Each Section	-	-	-	4.5 $\mu$ F
c <sub>g1-all</sub>	-	-	-	2.0 $\mu$ F
c <sub>a-all</sub>	-	-	-	-
Two Sections in Push-Pull	-	-	-	-
c <sub>o-ot</sub>	--	--	--	1.3 $\mu$ F
c <sub>ot</sub>	--	--	--	4.0 $\mu$ F

#### LIMITING VALUES

As Class "C" push-pull amplifier for C.W. Telegraphy or for F.M.					
V <sub>a</sub> max.	--	--	--	--	600 V
p <sub>a</sub> max.	--	--	--	--	2 x 10 W
V <sub>g2</sub> max.	--	--	--	--	250 V
p <sub>g2</sub> max.	--	--	--	--	2 x 2 W
V <sub>g1</sub> max.	--	--	--	--	-75 V
p <sub>g1</sub> max.	--	--	--	--	2 x 0.5 W
I <sub>k</sub> max.	--	--	--	--	2 x 55 mA
f max. (at reduced ratings)	--	--	--	--	600 Mc/s

BASE 87A



\*CV379

## A big performance Double Tetrode for the new U.H.F. wave-band allocations

Providing 15 watts output at 500 Mc/s. and with an effective upper frequency limit of 600 Mc/s., this new Mullard double tetrode, the QQQV03-20, is an ideal valve for communications equipment designed to operate in the new U.H.F. wave-band allocations.

As a result of new and important design features, this valve has the outstanding advantages of high anode efficiency, excellent power gain, low filament consumption and small physical dimensions. In addition, being of conventional all glass technique, the QQQV03-20 does

not require the complex and expensive circuitry that is normally associated with the disc-seal type of U.H.F. valves.

This double tetrode has special advantages in compact communications equipment, where, due to its small size and low filament consumption, it enables maximum savings in space to be made.

Brief technical details of the QQQV03-20 are given above. More comprehensive information will be gladly supplied on request.

**Mullard-Australia Pty. Ltd.**

55-61 Clarence St., Sydney. NSW 2006  
592 Bourke St., Melbourne. MU 2366

Associated with MULLARD LIMITED, LONDON; MULLARD OVERSEAS LIMITED

INDUSTRIAL POWER VALVES AND RECTIFIERS—TELEVISION PICTURE TUBES—ELECTRONIC PHOTO-FLASH TUBES—HEARING AID VALVES—X-RAY TUBES AND ACCESSORIES—GEIGER COUNTER TUBES—CATHODE RAY TUBES—PHOTO CELLS—IMAGE CONVERTERS—RADIO RECEIVING AND TRANSMITTING VALVES—THYRATRONS—STABILISING AND VOLTAGE REFERENCE TUBES—ELECTROMETERS—COLD CATHODE TUBES—MEASURING INSTRUMENTS—SCIENTIFIC APPARATUS—RADIO RECEIVERS—COMMUNICATIONS EQUIPMENT—ULTRASONIC GENERATORS—PERMANENT MAGNETS—MAGNETIC MATERIALS AND COMPONENTS, ETC.

MIC-53

# FIFTY MEGACYCLES AND ABOVE

## NEW SOUTH WALES

The February fixture of the V.h.F. Group was a Direction Finding Field Day held on 19th. There were seven stations taking part, as well as several home stations. An area within 40 miles radius of Sydney was divided into defined locations and each station had to be able to call and could operate anywhere within the boundaries of the area he drew. Scoring: Each station was allotted 30 points, to which were added 3 points for locating a station within a 1/2 mile, 1 point for being located by another, 1 point for being within 1 mile, and points were deducted on the same scale if the station was located by another. This proved to be a very interesting event, the results being: ZAAZ 100, ZATO 90, ZAOA 80, ZAGQ 30, ZBEE, ZHL and ZAJZ 10, ZAOZ 10.

On Thursday, 17th February, the 144 Mc. band was wide open in the Western-South-Western section of N.S.W. and through to Northern and North-Western Victoria. To use Hugo's 1912 F.H. amateur regulations existed. Contacts made included ZAOJ-300, ZATO-200, 50 on phone, ZWH-SATN 5 x 5 each on phone, IWH-3CL and ZWH heard ZAOJ 5 x 5 on phone. The contact between ZWH at Forbes and SATN at Binalong was 1000 miles away, 2250 km., the distance being about 300 miles.

The March meeting of the Group took place at the Petersham Technical College, Crystal Street, Petersham, on Friday, 4th. The lecture for the evening was given by Mr Noel Miller, AACIN, on the construction and suppression of radio interference which was very interesting and entertaining discussion on power line and sundry other sources of electrical interference encountered throughout the State on the broadcast bands. Noel also mentioned that it is better to conform in practice that a large proportion of power line noise is due to the bolts attaching insulators, cross arms, and stays on power lines becoming loose, thus allowing the potential gradient between the line and ground to vary.

Other items of business discussed at the meeting included a motion relating to the annual election of officers of the Group, and it is now the policy of the Group to hold an election of officers at the meeting following the annual meeting of the N.S.W. Division. This means that the officers for 1955-6 will be elected at the April meeting.

A letter was also received from the Divisional Secretary stating that holders of the Limited Licence were to be admitted to the Institute as full members.

The Field Day which was mentioned in last month's note has been postponed until the end of April due to the Group taking part in a major amateur contest, the N.S.W. Division. This Field Day will now be the annual Autumn Field Day last October. Full details will be given over IWI and mailed to country members.

The mention of country members brings to mind the policy of the Group to keep the portion of the 144 Mc. band between 144 and 148 Mc. available for the N.S.W. Division. Stations who try to contact Sydney are asked to use that portion of the band as that is where most attention is given when looking for signals from the country.—JAPC.

## VICTORIA

Last month proved a really excellent one for 3 mx DX with practically every country station coming into Melbourne. The outstanding performance of the month was that of Ray SAW, ZBEE, who worked 144 Mc. and 3 mx 'Forbes' on both c.w. and phone, the distance of this haul is approx 300 miles. Another c.w. and phone contact came when ZWH worked SPC 3CL at Warragul, a distance of 300 miles. Alan ZTH at Tatura and ZAOA at Corangamite also made a contact. ZATN also heard Ron Z2D at Warragul. Another first is reported this month in v.h.f. activity to Max ZBQ who made a contact with ZATO at Albury. This makes the first Melbourne to VK2 contact since 1948 and ZYL also worked ZRS and Arch ZB9 heard IRS, but no contact took place.

During the month, also ZEA, ZEE, ZFH and ZPO made contacts. ZANQ Warrnambool, ZAKR and ZEM, ZAGD Dunkeld, ZATH Birchip, ZL1 Leon-gaith, ZCI Nagambie, ZU1 Tatura, ZHG Coleraine and YLZ were all heard in Melbourne at Q8. Heard ZBEE and ZYL although the Launceston to Melbourne D.C. was being run by the R.A.F.

On the Fox Hunt last month Bill ZACZ and Bob ZOJ acted as control stations. Many thanks Bill and Bob. The Fox was successful on the first run and the second run both stations turned up by waiting for the Williamson Ferry which had closed down for the evening two hours previously, and on the run back along William-stown Road was caught by Norm Dench and Ray ZKD. On the third run, JVZ was first

The final location was at the home of Graeme ZAAZ, where twenty-five of the Group remained off the evening with supper and a post mortem on the doings of the evening. We wish to thank Graeme and Joan for their friendly hospitality in organising the meeting. We welcome to the Hunt for the first time Max ZEAW, Ray ZEAE and also Ray ZKD.

The V.h.F. Group which attended the Max ZBHQ their best wishes on the 50th Anniversary which was celebrated on Saturday night of Easter passing the Pacific with radio signals. Max is the most active v.h.f. worker on the band in VKZ.

At last month's v.h.f. meeting, Hans ZAHR gave an extremely interesting lecture on 'Electron-tube oscillators'. Hans went to a very great amount of trouble in preparing the lecture and even when 1130 came around Hans still had a considerable amount of material which he was unable to give out. It was however, a very good talk and he was able to hold the interest of the meeting for 3½ hours straight. It was a most enthusiastic audience who passed a vote of thanks to Hans for his efforts.

The second V.h.F. Field Day for the year was a very successful one with over 40 of the gang taking part. This is the largest number of portable sets to have been in the field in the past three years. There was much criticism during the whole afternoon, several of the stations reporting over 20 contacts. Some of the best contacts were ZUL at Mt. Hickey to ZRS at Albury, ZATN at Birchy on 30m on Freshwater Hill, ZBEE at St. Kilda Church, Island ZRS, ZFH at Mt. Macedon, Alf ZIE, with one watt on Mt. Dandenong, had some very excellent contacts. The weather was very delightful on all the mountain tops and the contacts were probably the most enjoyable one for all those who participated.

A very hearty welcome to Amateur Radio is extended to Neil Town, MAT, who has just received his call sign. We will be looking forward to hearing your call from Moree, Neil.—SLW.

## SOUTH AUSTRALIA

You know how it is, shape, holidays and domesticity before all else and before you know where you are, another month has shot by and well I am still on for ever. Of course there has been great glee in the south-east here to hold and I'll never be allowed to forget my sub-editorial lapse.

However, I haven't been unoccupied and I have had a number of trials of the 'ZL2A electron oscillator' for if you like, cathode-coupled oscillator! You it certainly is one of the easiest to get going and the power output can be increased by merely adding the cathode sections which are not more than 10 ohms. When using a ZATZ, with output on the ninth overtone, there is hardly enough to drive a double-beam tetrode into class B. There is also an output on the mixed stage in a ratio converter though, and the 9th overtone oscillator again in the second half of the ZATZ is quite feasible. The second disadvantage is a serious one and it can easily be missed. The ZL2A holder provides no capacitive feed-back for current control as type of 'cathode-coupled' tune Franklin's self excited oscillator, with maximum oscillation appearing at widely spaced frequencies. Under these circumstances the ZL2A does not effectively 'lock in' because the frequency is effected by paralleling the ZL2A holder with a coil which resonates on a frequency just a little lower than the overtone required. This is an inductive resonance and very little energy can be "locked" in the circuit. The coil must be phased correctly so that it does not accept energy from the plate circuits.

A recent copy of "CO" gives further details and I found the A.R.R.L. Handbook (1953 Edition) had the circuit in the v.h.f. section. As Warwick had the only notes concerning the v.h.f. activity in the S.E. area, I shall merely thank Stewart SMI for forwarding them. Further northwards in Narrocoote the author met up with Bruce Jefferd who now has his L.A.O.C.P. and call sign. Greetings Bruce, perhaps you can entice Wally to enter into competition? A xtal converter should work beautifully in front of that 750 ohm load.

In the above together with their respective areas Tom STL has now settled into Alice Springs and has hopes of getting back on 3 mx. It will take less time to build that converter Tom. What about a fix on 6 mx? Even an 8ft will perform well there.—ZKU.

## WESTERN AUSTRALIA

Mo. A few stalwarts still keeping the flag flying—SBO, 6CC and SGU have been putting in an appearance recently. Still little or not activity from SHK. I must say for the feeder: GSJ has been fairly quiet on 6 mx, but plotting great things for 2 mx.

144 Mc. Still the band of greatest activity so far as yours truly is concerned. No new calls

issued to report this month, but some of the yet-to-be active types are showing signs of progress. ZEAS now has a beam up at 35 ft., and the rx seems to be peaking as well as an AR30 can be expected to perk. The tx is under way and ZEAS has been assigned the duty of p.m. ZEAS threatens activity "at least at 8 p.m."—isn't it David? Anyway something may even have been heard from that direction by the time this appears in print. ZEAS was heard on 144 Mc. on the other night when GSJ was up. ZEAS, ZAQ, ZAS and GSJ all rolled up unexpectedly. However, after initial surprise was overcome, a fine evening was had by all. Thanks Don! This, by the way, after the same had visited ZEAS's shack.

ZEAS has been plotting a spot of power activity during lunch hours some time in March—more to report there later. ZVZ, ZA8 comes news of activity Kalgoorlie from ZLB. Howard at the moment has no one to work, but has been trying with him and so on leaving the tx running at home and analysing forth in the car with the rx. The tx is 6M7, 833 mW with a superregen with r.f. stage AR31. I hope to 'stabilise' the gear before long and then get another antenna up and down in Bruce Rock if possible. So there you are DSF.

ZKAR spends quite a lot of time just listening in to the tx pieces awaiting re-build. ZKAR should have finished N.S.W. by now, so may have little more to do. ZKAR drove to the BIS, ZEAE, and likewise ZEAR has some considerable time to go with the aforementioned N.S.W. and activity is therefore at a very low ebb.

ZSE has Signs of activity on one metre have been stirring again. ZEAV has a very neat mod. superregen set-up for the band and recently connected HBO over two or three miles with good signal. ZWY with ZBEE at 14 miles proved negative however. Walby has been endeavouring to put a stabilised transmission on the band, but eventually resorted to a s.s.b. Have you found the right mixer yet Wal?—ZSE.

## NEW GUINEA

Conditions on 80 Mc. from Port Moresby during December, 1954, were very poor, with several stations heard, but not worked, namely ZTK, HBO, SAQT, 4NG and 4WD. After the New Year, things improved a little, allowing daily contacts with 4NG, 4WD and also with the other V.K.s. The ZLA broke through one afternoon only and ZL1, ZLS, ZLZ worked before dark, but closed again for good. Nothing else worked. Chau Chak, ZVACO, still but with a weak carrier, even when he was working 4NG at 5 x 5. Am still using same xtal converter and running 38W, but with now have the 4L1000 at 80 ft. instead of 20 ft.

Both YK9 and myself are interested in working into VY9 on 80 Mc. We both expect going and will be ready by next Xmas to run checks with northern VY9 area. If such can be arranged, intend taking the SCRAM to Port Moresby via VY9, overlooking the sea to the South and setting up at 100 ft.

The D.G.A. G/A v.h.f. on 118 Mc. from this site works aircraft to almost 200 miles consistently with input power below the amateur limit and merely a ground plane antenna. Truly, the antenna is only 16 ft. high, 7,500 ft. but, likewise, their antenna system is not gain. With antenna gains of 16 to 16 db at both ends of such a circuit, the signals would be terrible. The above performance is a normal condition and the ear is a series of propagation conditions and it gives some indication of the Amateur's possibilities of spanning the Coral Sea on 2 mx under those rare, but favourable, conditions.

Would like to hear from anyone interested in the above together with their experience. I can't claim any experience on 144 Mc., my greatest DX being QSOs with 87N about 1 mile distant.—DBB.

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## VK2 AMATEURS

President and Council of the N.S.W. Division W.I.A. wish to congratulate all Amateurs who took part in the recent Flood Emergency in N.S.W. To serve one's State and fellow citizens is the highest ideal of all, and the W.I.A. and its members accepted with eagerness another opportunity to serve in this capacity.

Every call on Amateur Radio was met quickly and efficiently, and the status of the Amateur and its organization, the W.I.A., has risen considerably.

The report of the flood will be in our next issue; for now, congratulations O.M.s. You were wonderful—VK2WI.

Most of the activities of some of the more distant of our members have been hindered by bad conditions, but from our spies we hear that SAYS has been busy at Broken Hill, SALL still working the DX and SAW has a cubical quad in the air. EDQ still plays with a.s.e.t. on 14 MHz. SAW at Macksville lost his beam again as we hear from IPIW who was up that way recently.

We still require more notes each month and take this opportunity to thank those who have helped out this year and hope that in the coming year that conditions will permit more activity.

Stewart SPL reports that Brian Harriman and George Jones have passed their A.O.P.L. and are now members of your Listener League. I hope you boys get that 3 mx gear working soon, congrats on the ticket. Keith ZAAA at Tumut is having good contacts on 14 Mc. to Sydney. Don IRR at Albury is building a new tower to get 14 and 20 MHz beams should be in to get that signal through to Coonamoon then. Don. Lyn ZAGE has acquired a new home in Wagga so we should soon hear from him on the new ZTDX. Let's hope he'll be back on operation. The big news should turn our beans through Wagga. News from Coonamoon should get better now as more interest is being shown in operation on the "Old Man's Band". The latest news is that Alan and his XYL paid a visit to Griffith and spent a pleasant afternoon with 2PL last Sunday. Ted ZAXD at Griffith is building a new rig; hope to hear you on the air soon again.

## VICTORIA

The March meeting of the biggest and best Division was held on April 1 at the M.T.C. Before the show started there was standing room only. President Tony organized proceedings and after welcoming our visitors, including W1CPN, very quickly dealt with the few items of business needing attention.

Our new members for the month are R. S. Beckwith, P.W.V.; G. J. D. Wilson, Associate T. K. Robb. My apologies for any misspell names and a hearty welcome to the W.I.A. Don't forget to come to the meetings.

The main interest for the night was the film for which we had invited the ABC. "The Ice", a coloured film on Antarctica and the 1804 Redex Trial with a couple of others for good measure were enjoyed by all.

The next meeting, Wednesday, April 6, is the Annual Meeting of the Victorian Division. Who will ask the awkward questions this year? Come along and find out!

Due to the state of emergency in VK3, the National Field Day was postponed to a date to be announced. Let's hope the weather holds good until it is over and that there will be a few more starters. As is my custom, I have a growth. Why must we go five miles from home? Why are the best locations only 4-5 miles away? As from now I'm going to campaign to have the distance reduced to 4-5 miles, and Pansy had better be on my side—or else! Anyhow, that is quite far enough to push a bicycle, especially when it is loaded down with a day's rations, a Type 3 and Accumulators.

The Victorian Division congratulates the VK3 boys on their magnificent work during the recent floods. They more than deserve the commendation they received from all directions. To all those thoughtless types who caused them needless QRM, a special

award of a wooden spoon should be granted. If somebody will supply the names, there should be little difficulty in compiling a list of the culprits. May I suggest that on future occasions, if you are in doubt about emergency traffic, you stay off the air entirely. In other words, "I Sing, We All Dance" copied.

Thanks to Jack SWR, who is using this system, I've been able to have a little practice. It's not so difficult when you know how. What does sound interesting is the application of the principle referred to in Jim's design. What about an article for the magazine when you get it going Jack?

Does anyone know what a Coulomb is? You need one. Well ask Mrs. SLM and be baffled with science. There is a book on physics offered to call and pick her up after the W.I.A. classes, but the offer was declined. Watch out Len, or you will become a permanent baby sitter. Your rig is as good as gone already. Mrs. Sir, don't let me complimenting turn your beans against you or is the team to remain intact?

Now here is a gem of a story about two guys who had men. It appears they were stationed on opposite corners of a roundabout about 500 metres apart trying to make contact on 2 m. For some reason or other no dice so they resorted to c.w. on their headlights 3 mx bahl!

At last I heard the boys earning their money. Now I'd like to have words about the wretched telephone boys had but in the photo I have, SUX is right behind him. Now this SUX appears to be about 5 ft 6 in tall and must weigh 18 stone at least. He is wearing a Panama hat, I'd say soft pedal sofa on the subject. Did you see our worthy SPS did a good job, but after carefully studying the photo, it is obvious that a boy would have to be more than "wide" to clear the door chap. SUX is acting as the sign on screen at least as I have seen.

Listening round the bands for personal items I glean SVE contemplating a new rig and looking for ideas. SAJL trying his re-built modulator appears it refused to work when unpacked. SALM has been presented with another son; son to travel with and to keep 24 hours vigil for the rare DX or operate right through the R.D. Contest. JAHC is finding it harder to get new countries. Can see that 15 watts being jacked up somewhat. He claims he nearly lost his life when he was shot down by helicopter while he was working his way. Should have had him around a week or two earlier and had him place the beam in position for you Harold. SSO is back on the air after spending a couple of months in hospital. Our old friend SAW is still with ZATK and they got to reminiscing on their service days. The QSO finished at Max's QTH.

JWL and SWM still seem to manage to raise the DX. At least they are heard calling them. The 8 mx gang has dissolved or gone into something else. What is it? Is it DX, no activity? More cannot be said, except it is a good band for local contacts. Alright, it is a mix, but will somebody please tell me why 3 mx was used all the year and not 4 mx? The ball is in the W.I.A.'s scribe's corner. ZALO is expected to make a comeback in the near future, at least a new rig is under construction. SAMZ has acquired a C348 and Geleco v.f.o. and has gone DX happy.

## 80 MHZ TRANSMITTER HUNT

Forty-seven attended the hunt in spite of the thunder storms and heavy rains which prevailed. However, the bad weather didn't make much difference to the actual hunt as most of the competitors eventually found their way to the location. The first QSO on this occasion was hidden by Reg SZAD and Harry LJR. Prior to the hunt, Reg had done some much needed repairs to the keying wheel which was rather on the clever side. The tx was hidden at Pound Bend, on the Warragamba and was located under some dense scrub at the base of a 20 ft pine tree, which supported the antenna. The winners, Jack SVZ and Alf ERE, took one hour and eighteen minutes to find it. Their final words to Laurette ZALZ, one minute behind the winners.

## CENTRAL WESTERN ZONE

Must thank Chas for writing the notes last month while I was on my annual leave. Trevor ZATP and his XYL are on course for success so hope the weather treats you OK. On arriving home, found that clippers and razor had been at work after a long holiday. Yes, Chas' beard was long. I think may have been his XYL who encouraged him to take this drastic action. It certainly has made him look his old self again. Sorry chaps that these notes are so skimpy, but hope to have something better next month.

## NORTH EASTERN ZONE

Jim SJX now has two new things, a car and a signal on 2 mx, to keep Murdoch Ave. in

the news, while Jack 3AKC represented them on the February hook-up. Another QSO is now on 40 and 20 m. Another 3AKC, Howard SVO, would like his Amateurs to call him on Wanganella to call at 14 Reid Street and pass the time of day with him and Bruce. Henry JHT is quite active in his various fields. Des SWP is still working with his son, and Ron RAQG was thought to be getting used to the recently connected ac power. Col SWQ is another very active in more than one field, while Jack JPT is not quite so fortunate regarding his health. He is having an interesting time, and Ken SKE is running QSO with Doug, now 2LJ, on 49 mx recently. Unfortunately, Hugh JAHF had already set up other plans when the zone hook-up was announced, and for the moment, Vic 3ABX is missing.

SZO is not quite sure yet that he will be leaving the district. Syd SCI has quite an elaborate 3 mx antenna as his latest effort. Alan SUD is still working on the finishing touches on his mobile v.h.f. rig.

The monthly hook-up of the North Eastern Zone has been changed to 1330 hours on 3700 kc. on the last Sunday in each month.

## EASTERN ZONE

The February meeting was held at the home of Alf Mackrel. There was only a small number present due to a misunderstanding as to the date it was to be held. In future we will keep to the third Friday to avoid any further confusion. Special arrangements were made calling Lew JAZC of late so that it would appear he is active now. Ossie 3AJMK is complaining of conditions on 14 Mc. but he has not got that into his own. Visitors to the zone recently were Russell ZLZD, on his return from trip; also Harry ZLAZ and Rod ZLAM. Through these parts on the last leg of a 7,000 mile hitch-hike around VK, Alan has arranged for accommodation at Wanganella Creek Station on the zone's field day, to hold this meeting. There was a move by some members to change the name of the club, but nothing final as yet. The March meeting was held at Maffra when some slips were screened.

## QUEENSLAND

If by this date you haven't paid your dues, you are now unshameable. You must be financial to receive ARRL's International Institute.

The Annual General Meeting will be held on Friday, 1st April, and the Annual Dinner on Saturday, 2nd April, at 8.30 p.m. at Annes Club. The Downs Group are convening a Convention at Altona on the 10th and 11th weekend of May Day. The Council hopes every member possible will support that enterprise. They are donating sun-stripe pieces of gear to them to be used as prizes. It's to be hoped the Group will take the spirit of competition and hold that it may be one day an annual Divisional affair.

The Listeners' Group got away to a fine start with some thirty or so enthusiasts at the initial meeting. With the promise of gear, rent and assistance from members of the Division, the Group should become quite an active adjunct to the Division and an addition is a guide to the members.

February meeting was held at a very entertaining film by Ernie 4GE. He promises another lot for next meeting. The attendance was very poor, as usual, only enough members present to make a quorum. To those who were there, we thank you. This is on the fourth Friday of the month, the place is the Royal Geographical Society, Ann Street, so what say we give you a little more often in the next month?

Responses to the call for new Councillors was very poor, having received only three new nominations. So it looks as if we are stuck with most of the old crew once more. It's a pity as I think most members would like to turn over the administration and I hope that they won't be kept on by the criticism of Council's actions which is usually the members' own lack of activity in the Division the cause of all complaints.

Well chaps, here's hoping for better conditions, more activity and a stronger Division, and seeing you at the Annual Meeting and Dinner.

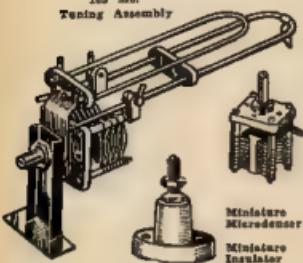
## VKA BRANCH

By the time these notes reach the press, the VKA Branch may well have blossomed into the VK3 Division, probably making the cover of the Cal Book a little more accurate. At the time of writing we are awaiting the green light from Federal Executive.

These bring the initial notes from this area. We thank the VK3 Division Committee on behalf of the VK3 Branch Committee for thanking each and every member for the splendid support offered in enabling the Branch and ultimate Division to be born, and we feel sure that the Division will continue, keeping the Division in the fore in all future activities.

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The 7890 KHz hook-up on Sunday mornings has been quite successful, the conditions normally allowing the most distant—as well as the nearest stations—to participate with good to excellent results. All in all a large percentage join in and the fast deriveing into a pleasant Sunday morning interlude, provided Morsey has its QRM machine switched off. What say Frank?

And now for a tour round the Islands to briefly meet some of the gang. Our own guard is Sam SMT from Dutton, who is in the net mostly on SWL but recently on phone. At Rabaul, Col SWL and Bob SBS always appear to be working the same DX, but as they are almost side by side, it's hard to say that way. Quite a few VK5 SLs have turned up for our parties. Bob SWL does a tremendous job with his 4 watts. Occasionally Ron PRG is available when not moving around the plantations. What about portable rig? John RKT recently put the rig back together. Roy FAWL and Guy SMT (Lasmessong) is still on a lengthy sojourn in the States. Harry SHO, at Kavieng, has been suffering transformer troubles, though he is heard from Peter PRG. Over to Keith SBS at Lae, he has had a few problems—particularly the airborne mobile we were discussing. Arch SGB, having returned from leave, has settled in and got things chugging.

From Madang, Carl SCS advises that his duties exclude him from the net. Thanks for the info Carl. On another note, Wim PRG says that SAB must have been thrashing the 20 m DX during 1954 as I have a stack of QSLs off the last boat and about 90 per cent are yours. Also Chas PRG owns a few of the cards, guess this Wewak may have something. Don't know if this is the case, what about the stations on the Geloso with the All-band final Don? The thing must work because I have several cards to you! Frank PWZ at Momote (F/Sgt), to your net head of lab and management, is a lowly SAB, but try this (numerically I mean!). Both Peter SHM and Ron SRT (at Wau) having their share of trouble lately, but who isn't?

Back in Morsey there is Alz SAB, who has been busy but says he's too busy to get on. Morris SMT has threatened to get on for years, but hasn't yet made it. Chas SWG occasionally makes the grade, but not often enough. What about Chas Getz, he's been on the net since R.D. Conroy will open the VKS Division this year! Frank PWZ gets on as frequently as possible and heard chasing DX at times of all things! Frank had plans for beans and 6 m gear, but the new one was to have the upper hand. Roy FAWL, Reg SWP and myself, had a while from Omanai, met him several times and heard him on the air from Badili, but not so late. George RGV is at present residing in Moreton.

Douglas PQK recently joined our ranks from VK3 and I wish him, on behalf of the VK9 gang, a pleasant stay in the tropics and good hunting in the years ahead. Doug is just completing the rig and should be on the air不久. Frank PWZ, the previous Gov. of VAW (ex-GWU), Doug moved in where you moved out! Reg S2AL our only limited license holder, is still working on that 2 m gear up there on Pang Hill. Both SWL and myself are present to test your gear Reg. S2AL is present on leave in VK proper and trust he is having a right royal time. Talking of leave, yours truly happens to be writing these notes on board the M.V. "Galio" on the way to Vicks Island. Last time Tom SWL and my activities have been gratifying, also keep a watch on Si Mc. Incidentally, SWB is the only other VK9 I've heard on this band. Was rather disappointed with my conditions this year, but better luck next time.

Well fellow I've made a start on these notes and to keep them going would appreciate any items of interest from the gang, particularly with regard to activity or contemplated activity on v.h.f. bands, etc. Regards to all—9DB.

## SOUTH AUSTRALIA

The Annual General Meeting of the VK5 Division (known as the Division which has what it takes!) was held in the club rooms to a large audience. I cannot help but notice that the number of members attending the Division in the business of the Division, an increasing interest that is good to see and one that will keep us in a healthy condition as long as it continues. It is little difficult to write anything about an annual general meeting because every meeting of this type runs strictly to pattern and are the same as those of twenty years ago. The general business of the night was opened by a general discussion on a pro-

posed amendment to the constitution which would permit, at a future date, the acceptance of the holder of a Limited A.O.C.P. into the Division as a full member. The amendment was carried unanimously. Jim SWL has brought up for discussion the matter of Civil Defence Emergency Networks and the matter was eventually put back into the lap of Council for further discussion.

Douglas SWY then rose to his feet to say a number of complimentary words about Jim SJO, who was retiring from the Council after an association with the VK5 Division dating back almost 25 years. These sentiments were echoed by all present in my uncertain manner, and I say nothing further on this matter than to add that the VK5 Council has lost a stalwart. Actually he is only retiring because he feels that he would like to become one of the members sitting down in the body of the meeting. After a short delay of 25 years, with the "lofty-waffles" he had lost touch with the general membership. This meant the end of the business side of the meeting and the time was made clear for our usual three-monthly social and general gathering in a masterly fashion by Douglas SWY to the intense amusement of the membership and to the financial gain of the Division as a whole.

Among the welcome visitors were the following: H. Green, J. Parry, D. Hyde, A. Humphries, P. Conroy, F.W. K. Skeels, F. Forsyth, D. Caffer, from Port Moresby, J. Campbell, and J. Crawford. A number of these visitors attended because of the possible formation of a Short Wave Listeners' Group, and Jim Parry took them along to the meeting and arranged a meeting for them at a later date. I was talking to him today and he tells me that a preliminary meeting of the Group has since been held, and judging by the enthusiasm displayed at this inaugural gathering, the Group will fill a definite gap between the Amateur and the Listener, to the eventual benefit of the Division. To the discomfiture of the Council, one of these prospective members of the S.W.L. Group wrote to Jim and told him that he had read of the formation of the Group in the local paper, which means that at least I have a reader, and proof in writing at that!

## SOUTH EAST AREAS

The monthly meeting of the South East boys was held on the last Thursday of the month, and as usual brought the gang out of their hiding places. No tapes being available, Tom SWY read a short section from "London Calling" on conditions existing on various short wave frequencies. Stuart SWH then gave his version on the conditions existing on 30 m, winding up the talk with a round-up on 10 m, SWY to be heard for the month, supporting his comments with a few words of his own. That received. The meeting concluded with general comments on all things Amateur Radio, and a good time was had by all.

The news from the S.E. areas this month seems to be mainly to do with the v.h.f. bands, and has always been our policy to avoid treading on toes of the members of other v.h.f. scribe (he is a big burly brute and possessed of a violent temper), but as there has not been any v.h.f. notes in the magazine for the last month or two, I feel that I may enter where angels fear to tread! Oh boy, oh boy! what a victory for me. Just because it is school holidays, these chalk wielders think that they can knock off everything and catch on. Not whilst Simon Legree Parsons is around! Up Bowen, up Bowen, must I use the whip!!!!

SWT is usually active on 144 Mc. on Monday nights for his contacts with SCJ and SCH, although Tom is to be found on the regular band of 40 m if conditions permit. A newcomer to 144 Mc. is S2AL, who has a modified 523 and is hoping to get further afield when he gets everything lined up. Bram SZAB, from Naracoorte, is in the process of modifying a 522 to operate on 144 Mc., and is building a 522 on 144 Mc. He has been heard at times on his favourite bunting ground of 40 m, but Col is another one who has been heard in schedules with the gang on 144 Mc. SWH has been a real unknown on 144 Mc. from his arrival, with SWL and SWP. He recently had his new 752 re-aligned and Wally is very pleased with the performance of the rx these days. SKU has been heard occasionally on the air.

SFD is another backslider who has been heard on 144 Mc. and 40 m. Another newcomer is Ray Bishop, who is a regular attendant at the monthly meetings, is extremely keen on Amateur Radio, but his business activities rather cramp his style at times. Keep up the good work, boys, have a go at the 144 Mc. band, not that hard to get even I got it after the sixteenth attempt! SMS had the pleasure this month of contacting VPSAE on telephone, thus striking a double this year (1st VK on e.w. and

1st VK on telephone), apart from TPSV, this was his only new country for the month. Stuart has built a new modulator using 611s, class B. Claude SCH gets a second mention in the notes this month because he brought along to the monthly meeting an RAX type rx and explained its use to all concerned. It is a bit of a BC45er following a BC454, and all if he believed it certainly delivers the goods.

This month has been a bad month for me, mainly for two reasons. The first reason being that the VK5 scribe has now become openly inciting me to playfully and venomous invectives. The check of his opinion paragraph in last month's magazine, "In reply to many requests, mainly from VK5," wouldn't it? Why I am speechless! If I had not lent my umbrage to F.M. I would not and ride away never to return. The second reason, however, is a horse of another colour. I was listening to Jim SJO in contact with a VP4 recently, and the VP4 said to Jim, "What sort of a character is the Port Moresby writer of the VK5 notes?" Actually he did not say character apparently, having difficulty with his spelling in English, and used the VP4 equivalent of moron. Now this word moron had me stumped and when I asked Jim SJO who he spoke, I immediately heard what the word moron meant, she said it meant southpaw or wise man. Now perhaps you can see just why I am as upset this month. Here I am writing the VK5 notes for all these years with the same pride and the same impression that I am a first class dillpot, and the first VP4 that reads them thinks that I am a southpaw or wise man!

The Editorial of last month's magazine was well received in VK5 and has the nail on the head with respect to the main points raised as we should. However, the suggestion that the time is fast approaching when we will have to send our own delegate from the W.I.A. to represent Australia at the next International Telecommunications Conference was not so well received. Not that the idea was rejected, but the expense angle was the bug-bear. After all, the money for such a trip has to come from the Divisional funds or in other words, from the pockets of the members. VK5, for example, to be mighty careful in balancing its budget to keep the Division on an even keel, without asking its members to cough up for a trip away for any delegate, no matter how good he may be. He is a good boy, a good cricketer in the wilderness, and if the two larger world societies cannot now be expected to represent VK5 at the Conference, then it would be expecting too much from a lone delegate to do the job. The poor public relations man, radio and file of VK5 and could be wrong, but no matter what VK5 does in the matter, or anyone else as far as that goes, Amateur Radio will just have to make do with those who are available and that has never been any different.

Last month saw the annual cricket match played between the c.w. boys and the phone boys from VK5. This cricket match is really an annual grudge match which always seems to be won by the c.w. boys, no matter what tries the phone boys can think of. The phone men, with Len SWK as captain, won the toss and elected to bat first, to the accompaniment of cheers and jeers from the c.w. team captained by Arch S2A. Batting with superb skill, Jim SWL and Gordon SWP scored 20 before being separated, and Len SWK, together with Clem SWL, paid a short visit to the wicket, being each presented with a full grown duck by the delighted c.w. team.

The next man in passed through the pavilion to the terrific uproar from the crowd, it was Farnie SWL, the most popular and most popular, that exponent of the leg glance, that muscular darling of the teenagers. Luke S2L, who was wheeling him on to the ground in the oval with a wheelbarrow, said "I don't hit him too much of a wicket because without wanting him to break up the wheelbarrow and marched back through the gates. "Will he break his duck?" the crowd asked. "Will he hit a six?" Their questions were not answered because one of the fieldsmen was not able to get the ball to the wicket by the this end and not the thick end! We will draw a curtain mercifully across the rest of his innings: more by luck than judgment, his bat got in the road of the ball and bounded away, a couple of times, for a few runs, and to his disgust and the crowd's delight, Les S2Z deliberately knocked his stump flying into the air. Luke S2L and Joe SJO, together with Len SWK, Gordon, Hewitt, and John SWL, paid a short visit to the wicket, being each presented with a box of 50 runs, which more than satisfied the phone boys who are always thankful for small mercies.

The c.w. team took the field in a very confident manner when it came time for them to bat and knocked up the excellent score of 118 runs, the driver of the team being Gordon SWP for the c.w. side, as were three other visitors, and the phone men are considering whether or not a protest could be upheld. Judging





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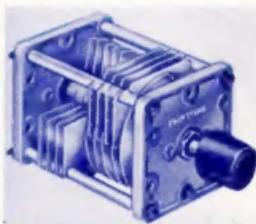
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